NEW JERSEY DEPARTMENT OF TRANSPORTATION

STATEWIDE LONG-RANGE TRANSPORTATION PLAN

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NEW JERSEY STATEWIDE
LONG-RANGE TRANSPORTATION PLAN
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PREFACE

This long-range transportation plan for New Jersey is not a conventional plan with lines on a map showing existing and proposed facilities and services. Instead, the plan sets out policies, choices, and directions for decisions out of which projects will emerge between 1995 and 2020.

The plan has taken more than two years of careful study, discussion, and interaction among staff of state agencies, interest groups, and hundreds of citizens. It has been a big process, but one that has yielded a concise product and a specific list of actions. Fourteen of these have been designated as "showcase actions" and require initiatives now that will lead to results ranging from late 1995 to 1998 - 2000.

Plans require people and agencies to implement them. NJDOT and NJ TRANSIT will assume lead roles in pressing for the many decisions needed over the next 25 years to bring the plan's benefits to life.

EXECUTIVE SUMMARY

Introduction

Transportation has always profoundly shaped our lives -- and it will continue to do so into the next century and beyond. This plan -- **Transportation Choices 2020** -- sets a sensible course to guide the changes that will need to take place to make the transportation system serve the needs of New Jersey's citizens, as well as support the economy and environment of the state. The plan is not "lines on a map"; rather it provides policies, choices, directions and recommendations for decisions and actions that will lead to lines on a map.

Planning for a transportation system 25 years in the future is a difficult and complex task. The future is uncertain, requiring this plan to be flexible. The values of our citizens range widely, requiring this plan to be reasonable. And our transportation needs are great and our resources limited, requiring this plan to be fiscally prudent. This plan is far reaching and bold, reaching for the plausible, but is grounded in reality and the "art of the possible." This plan acknowledges the present, yet anticipates change.

Transportation Choices 2020 is built on a number of broad themes. The plan recognizes that the state's citizens are the consumers of transportation services; the plan is guided by their needs. Yet conversely, the citizens must be educated about the constraints and limitations facing transportation providers. Making progress is difficult with the myriad of public and private stakeholders; the plan acknowledges this through the creation of partnerships to further mutual interests. The plan recognizes the strength of the marketplace and sets in place mechanisms to harness that power. The plan is comprehensive and varied. It addresses transportation to move passengers and freight, transportation by road and by rail, transportation that is motive-powered and that is human-powered, and transportation for those with access to private automobiles and those who lack such access. The plan highlights the land use and transportation connection -- that the way we build on the land affects the transportation system, and the transportation system we build affects the way land is developed. And the plan recognizes that there are no generic answers, that transportation solutions vary just as the state is varied.

The themes for **Transportation Choices 2020** flow naturally from two recent federal legislative actions. The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) requires each state to prepare a transportation plan every three years and stipulates the requirements for such a plan. **Transportation Choices 2020** meets those requirements, including the explicit consideration of numerous relevant factors identified in ISTEA, the development of six management systems that better track progress and support strategic decisions, and the establishment of an effective public involvement process. This plan has also been true to the spirit of the Clean Air Act Amendments of 1990 (CAAA), which endeavor to reduce harmful vehicle emissions by emphasizing actions that encourage alternatives to automobile and truck travel and de-emphasizing actions that increase unnecessary vehicle travel. This plan is consistent with the policies of the state-adopted State Development and Redevelopment Plan (SDRP), which encourages, through voluntary actions, the development of areas with the transportation infrastructure in place to support redevelopment and growth.

Transportation Choices 2020 has not proceeded in isolation from other ongoing planning activities. It draws upon a host of efforts that preceded or paralleled this plan. And its work, recommendations and conclusions have been coordinated with the ISTEA-mandated long-range transportation plans of the three New Jersey Metropolitan Planning Organizations, with NJ TRANSIT, and with NJDOT's own strategies for short-range actions.

The Existing New Jersey Transportation System

New Jersey's transportation network includes 34,000 miles of streets and highways, on which most of the state's travel occurs and its freight moves. Over two-thirds of this system consists of local roads under local jurisdiction. The other third includes interstate or other limited-access highways (800 miles) which are under state jurisdiction, major arterial roads (about 3,800 miles) under state or county jurisdiction and minor arterial or collector roads (some 5,200 miles) mostly under county or local jurisdiction.

About 400 miles of roads in the state are under the jurisdiction of special authorities. Most of these roads are tolled, and are administered by the New Jersey Turnpike Authority, the New Jersey Highway Authority (Garden State Parkway), and the South Jersey Transportation Authority.

The highway network extends over some 6,000 bridges, 2,500 under the jurisdiction of NJDOT and 2,300 under local jurisdiction, with the remaining 1,200 the responsibility of the various authorities.

These highway facilities carry the 5.7 million vehicles registered in the state, as well as the traffic from other states. Some 60 billion vehicle miles are traveled on the state's roads annually, up by 170 percent in the past 30 years (a period when population grew by only 27 percent and the labor force by 62 percent). Of the registered vehicles, 90 percent are passenger cars. Passenger car ownership has increased rapidly in the state, up 130 percent in the past 30 years. Today, each household has 1.6 passengers cars, and the majority of New Jersey households own two or more vehicles.

The growth in vehicle use has come at a price: congestion. Thirty percent of the state's roads are congested at some time, usually during commuting hours.

The transit system is large and varied -- 3,000 buses operate over 200 scheduled bus routes carrying 175 million riders annually. The 11-line, 426-mile NJ TRANSIT commuter rail network carries 42 million passengers annually, mostly into New York. Two 14-mile rapid transit systems -- PATH in North Jersey and PATCO in South Jersey -- carry another 71 million riders per year, and one light rail line, the Newark subway, carries another 4 million riders. Use of ferries is on the rebound: in early 1995 eight ferry services serve a mix of commuting and recreational needs. Specialized paratransit services meet needs that regular route services cannot. Many park-and-ride lots at rail stations, bus stops and key highway locations support this vast transit network and ridesharing activities as well.

Intercity passenger services are provided by air at Newark International (27 million passengers) and at Atlantic City International Airport (1 million passengers). Amtrak serves five stations in New Jersey on the Northeast Corridor Line. Almost 1.0 million rail trips per year are made on these lines. Limited intercity bus services exist, with a thriving charter bus service fueled by the Atlantic City casino industry.

Freight moves in New Jersey by a variety of modes. Trucks carry some 150 million tons of freight annually, rail 22 million tons, ships 57 million tons, and air 2 million tons. The nature of the freight industry makes transfers among modes at intermodal facilities very important, especially sea and rail containers which become truck trailers. There are three major rail freight carriers in New Jersey, led by Conrail, and numerous "short-line" operators. Most air cargo comes through Newark Airport. Waterborne freight operates through four ports, with Port Newark/ Elizabeth being the dominant one.

Strengths and Weaknesses

Transportation Choices 2020 assesses the strengths of transportation and its weaknesses to assist in targeting the types of actions that should be pursued in the coming years. There is no doubt that the New Jersey transportation system's greatest strength is the vast extent and variety of transportation services and facilities. The road network is twice the size of the nation's on a per capita basis. One billion dollars are spent annually to upgrade it. The roads are safer than ever before, with highway death rates down by almost half in the past few years. Public transit is large and diverse. NJ TRANSIT's bus and commuter rail system are each the fourth largest in the nation. Heavy infrastructure investments since NJ TRANSIT was created in 1979 have modernized rolling stock and stations, upgraded rights-of-way and resulted in a reliable and attractive alternative to driving for many travel markets. A half billion dollars annually is spent to continue this record. Newark Airport is the eighth busiest in the nation and provides access to almost all major airports in the United States and increasing numbers overseas. Amtrak services, particularly from Newark, give New Jersey ground access to major cities in the Northeast Corridor and to many others in their network. The freight system is well-positioned with terminal, intermodal and warehousing facilities located near the huge markets in the New York metropolitan area.

Bicyclists and pedestrians are components of the overall transportation system. The traditional towns and villages in New Jersey are well-suited

for pedestrian and bicycle travel. As a result, many residents of the state are able to choose to walk or bike to complete short trips, never having to use a motor vehicle. These residents thereby help to alleviate congestion and air pollution. Many more residents might choose to walk or bike if more compatible roadways were provided.

However, looking beyond the size and diversity of the transportation network uncovers many weaknesses. The system is old. Most of the highway network is over 30 years old and most of the rail network is much older. Of the 2,500 state bridges, 20 percent are functionally obsolete and another 24 percent structurally deficient. Local bridges are in a similar state of disrepair. Thirty percent of road pavement is in fair or poor condition. Transit vehicles need to be replaced regularly -- buses every 12 years and rail vehicles every 30 or so. Each of transit's fixed elements -- track, roadbed, signals, station buildings and platforms, maintenance facilities -- requires constant attention. NJ TRANSIT is also responsible for 700 bridges, many in poor condition. The large annual investment in infrastructure tends to consume available funding, making it difficult to respond adequately to new markets and new needs.

Congestion on the state's roads has become pervasive, particularly in the commuter peak periods on the many limited-access roadways. Most people drive alone, aggravating the problem. Lost time drains the economy and lowers the quality of life for our citizens. Many specific congestion points are long standing and are without cost-effective solutions. Breakdowns, accidents, and other unpredictable and non-recurring incidents account for much of the congestion and delay. Congestion problems defy easy solutions. Adding new or widening existing highways is expensive, often unwanted by the communities in which they pass, and could lead to more vehicle emissions and sprawl. Ridesharing is inconvenient for most single-occupant drivers. Transit, particularly in lower-density places, is not cost effective. Bicycling and pedestrian travel can substitute for a fraction of auto travel.

The transit network is not well-suited to serve the many scattered trips which are no longer oriented radially to the urban cores. This holds for trips in the "reverse" direction, or in the off-peak period. The rail network often requires using a car to get to it. Parking is often scarce at stations and provisions for safe bicycle storage are inadequate. Although buses generally operate closer to residents, their slow speeds leave them unattractive to many. Low densities leave many places unserved and unservable without huge subsidies. Streets often create barriers to bicycles and pedestrians, with inadequate, often poorly maintained crosswalks. Pedestrians are involved in more than 20 percent of the fatalities on New Jersey's roads.

The freight network has its problems too. The rail freight network terminates in New Jersey and requires a shift to trucks to serve the huge market east of the Hudson River. Trucks face the same congested roads that autos do, and are limited to routes with sufficient clearances and weight allowances and thus cannot use most of the parkways. Water transportation is threatened by insufficient channel depths for certain cargo. Locations where intermodal freight movements can be made are often obsolete and inefficient. Overall freight activities are not coordinated because there are no institutional mechanisms to do so.

Challenges and Opportunities

Within the framework of **Transportation Choices 2020**, we need to exploit our strengths and bolster our weaknesses to meet the challenges and opportunities we face over the next 25 years. Making decisions about transportation priorities is becoming more difficult. Competing interests often see their viewpoints as non-negotiable, even as they seek a larger piece of a shrinking pie. Competition is intensified -- among regions, among municipalities within a region, among modes. Resources are shrinking, forcing us to either lower our standards or abandon lightly used facilities we can no longer afford to fix.

The process of making decisions is hampered by the multiplicity of state agencies and authorities that are responsible for our transportation system. Added to that are local jurisdictions which benefit from and/or are impacted by the system. The effect is slow and sometimes contentious decision-making, which can result in a delayed decision or none at all. All this while more and more stakeholders are rightfully demanding a place at the table. Often, local opposition can cancel projects because of the direct impacts they experience, while those who would benefit in the larger region are either unorganized or unaware of the issue.

Transportation decisions, usually made at the state or county level, are sometimes negated by land use decisions made locally. But the two are seldom considered simultaneously, although they impact one another. Local zoning actions may lower road capacity at the same time NJDOT tries to increase it. Local ordinances may set up barriers to transit, bicycle use and walking. And parking requirements may create built-in driving incentives by providing free parking for all. Higher-density, transit-supportable residential densities may be opposed because of fiscal impacts, while low-density, non-residential developments that are auto trip magnets are welcomed, as localities continue to rely on fiscal zoning to limit property tax impacts.

The political process is geared to short-term popularity rather than long-term gain, often working to defeat actions that have the greatest "life-cycle" benefits. Many are resigned to only small and incremental steps rather than bold actions, believing that the latter are too difficult.

We are challenged by the changing constituencies the transportation system must serve. The past generation or two has seen the state's population and employment shift from the city to the suburbs and beyond, adding demands on the highway network and lowering the use of the in-place transit system. More working women and two-income households have stretched the length of the work trip and heightened the value of the automobile's convenience, furthering its use and adding to road congestion.

The transportation system is not equitable to those who cannot drive. That includes some 1.1 million New Jersey residents either too old, too young (adolescents) or too infirm.

Our air is unhealthy and much of that is caused by the motor vehicles we drive. But cleaner air comes at a price. Changes in our driving habits have been mandated and now "softened" by the federal government as employers have complained that they are too burdensome. Can we simplify the regulatory process yet clean up the air?

New technologies are coming on the scene at a dizzying pace, but the public sector is not usually able to react fast enough to take full advantage or to make the initial investment in this era of tight budgets and limited research and development funding.

The challenge of finding adequate funding is fundamental. Operating budgets for the state's transportation agencies have been going down, as they are being asked to do more with less. Capital costs are climbing; it is becoming more expensive to build in developed areas, and more lengthy processes add to costs.

What are the opportunities we have to respond to these challenges?

We can take advantage of technological advances. Technology can help respond to traffic incidents more rapidly and warn drivers away from trouble spots. Electronic tolls can reduce waiting delays at toll plazas and allow for more efficient road pricing. Telecommunications can reduce the need to commute, as workers increasingly will be able to work from home or remote locations. Technology can also be used to more accurately track system usage to enable more efficient deployment of services and to maximize revenue.

Experimental transit services have been put in place through NJ TRANSIT's WHEELS program to test new suburban markets with demonstration programs. New fixed guideway services are also being considered that can provide useful connections to existing lines in middle-density neighborhoods. If linked to supporting land use changes they may effectively reduce the growth of congestion.

The application of market-based principles to the pricing of transportation provides the opportunity to more closely match the value of a service to its price.

New Jersey is well-positioned to take advantage of the global economy, given the location of Newark Airport, its capacity for trucking and its well-developed rail freight and marine facilities.

Finally, New Jersey can develop the kind of working partnerships that are necessary in our complex society. Some of these are already in place to respond to traffic incidents (TRANSCOM) and to implement electronic toll collection (EZ Pass consortium). Linkages with other state agencies can be strengthened to assist with the Clean Air Act, to implement the SDRP, to promote transportation to the state's attractions, and to establish intermodal freight districts. Partnerships with localities can be established through NJ TRANSIT's transit-friendly station areas program

to create more effective local ordinances that support transit-friendly environments. NJDOT can form partnerships with businesses to promote home telecommuting, rail freight improvements, and fast-track construction, among others. And NJDOT can form partnerships with transportation consumers to learn first-hand what they need from their transportation system.

Public Involvement

Public involvement is one of the watchwords of **Transportation Choices 2020**. The process established was geared to active and early involvement of stakeholders and the general public to seek and gain a diversity of opinion. The process sought to uncover problems areas, issues, and needs. It also explored the concerns and tensions among individuals and groups, building consensus where possible.

An unprecedented array of activities were part of the public involvement program. To communicate with the public, newsletters were issued at important junctures in the process. Technical bulletins were included to provide background information. To gain a sense of the interests and concerns of the general public, a telephone survey was conducted. Three rounds of focus groups were held to discuss the public's perception of the transportation problems in the state and to explore some strategies for solving them. Two rounds of regional forums were held, in public places: shopping malls, a museum, a university, a truck stop, transit stations, senior citizen centers, office buildings. About 1,000 comment cards were filled out in response. To solicit the concerns of the front-line providers of transportation, 13 meetings with employees of NJDOT and NJ TRANSIT were also held.

Issue groups were formed to establish an ongoing dialogue with over 200 transportation specialists, planning advocates and representatives from public, private and not-for-profit organizations. Five sets of meetings, the first two stratified by four policy areas and the next three by geography (north, central, south), were conducted to gain a more local flavor. Topics dealt with in depth included goals and objectives, transportation problems, the vision for the state, priorities, possible actions and their feasibility, and implementation steps.

A special symposium with the NJDOT Commissioner was also held to present the baseline conditions of this plan to a wide audience, to learn his perspective on long-range planning, and to open a dialogue.

The Vision and the Goals

Transportation Choices 2020 puts forth a vision of the kind of New Jersey we might like to be living in 25 years from now. Such a vision can help decide the transportation choices we begin to make in 1995. The vision for New Jersey of **Transportation Choices 2020** is a state where travel choices are available to our citizens that ensure a full range of opportunities. The state will have become a leader in creating successful community development patterns. It will be leader in the global economic marketplace, in moving goods, in research and in tourism. New Jersey will have advanced high-technology industries and thriving low-technology industries as well. Our air and water will be cleaner and more of our land protected, in part helped by a more environmentally benign transportation system and by the move toward communities where citizens feel less alienated and more protected.

Five goals emerged from the **Transportation Choices 2020** planning process, each reinforced by a list of more specific objectives. The goals follow.

- Promote Economic Development
- Improve the Quality of Life for Users of the Transportation System and Those Affected by Its Use
- Use Transportation to Shape Desired Development Patterns Consistent with the State Development and Redevelopment Plan
- Improve the Effectiveness, Efficiency and Attractiveness of Transportation Services Responsive to the Needs of the Customer
- Improve the Process of Providing Transportation Facilities and Services

The objectives associated with each goal will be a springboard for establishing performance measures which will be used internally to better manage resources and make strategic decisions and as a report card to the public for helping them judge progress toward meeting the goals of the plan. NJDOT will work with the state's transportation agencies to develop the report card.

The Transportation Plan

Eight overall strategies form the essence of **Transportation Choices 2020.**

Support the Safety, Security and Health of the Transportation User
Safety actions simultaneously emphasize safer roads, safer vehicles (parlaying new programs as part of the newly integrated Department of Motor Vehicles with NJDOT), and greater enforcement and education. Actions include heightened security measures for public transit and increasingly for highway travel, as well as creative solutions to air quality concerns.

Maintain, Repair and Upgrade Infrastructure
This strategy consumes most of our existing capital and will continue to do so as we seek to protect and upgrade past highway, transit, and intermodal investments.

Maximize Service Provided by Current Transportation Infrastructure
This strategy focuses on getting more out of the existing transportation network through relatively low-cost improvements. It includes more "hands-on" management of the highway network, actions that encourage shifts to higher-occupancy ridesharing and transit vehicles, better responses to incidents, a variety of transit-and freight-related actions, and more farsighted actions to preserve rights-of-way.

Provide for Strategic System and Service Expansion
Highway investments within this strategy are limited to cost-effective missing links, widenings and bypasses where they can be shown to be the only realistic solution to congestion problems or to be integral to significant economic growth. In contrast, numerous transit service and route expansion opportunities exist, although they too will have to meet cost-effectiveness criteria based on specific conditions, and will have to conform to the goals of **Transportation Choices 2020**.

Exploit Technology
This strategy emphasizes a balanced and prudent use of technology -- promoting its early introduction, yet not expecting that spending enormous sums is a panacea for transportation problems. Advanced information systems to provide more accurate and timely data for the traveling public and for transportation managers, more customer-friendly fare and toll collection techniques, telecommunication to reduce travel demands, and less polluting vehicle technologies are included.

Improve Management Practices
A variety of diverse actions are recommended in this strategy, including more use of the private sector to build and operate transportation services, internal management actions that adopt private-sector business practices, and innovations that respond to customer needs and concerns.

Partner with Local Communities and with Businesses
This strategy addresses the transportation and land use connection, and the need for state government to work with communities to coordinate actions to get the most out of a multimodal transportation system. This strategy also focuses on working with employers to find creative solutions to reduce emissions and congestion while not burdening employers with overly intrusive regulations. It also encourages public/private partnerships where there can be shared risk. Joint ventures can produce "win-win" results for both parties.

Educate and Communicate
If the public is more informed about transportation issues, then unnecessary conflicts can be avoided and decisions made more rationally. Conversely, if government is educated by the public as to what its concerns are, government can more accurately meet the public's needs. This strategy focuses on this two-way education.

Within these strategies, over 150 actions were developed, with strong assistance from the public involvement process. Each action was judged against the goals of the plan -- economy; quality of life; stronger communities; effectiveness, efficiency, and attractiveness of the transportation system; and improved decision-making process. Each action was screened as to whether it violated the themes of the plan -- respond to customers, partner, use market forces, meet diverse needs of the state's citizens. And each action was screened for its realism, its achievability, its consistency with other actions, and whether it brings us away from conflict and toward consensus. Ultimately, some 120 actions were allocated over the eight strategies.

Within each strategy the actions recommended are divided into three categories -- new initiatives, new emphasis, and continue -- to distinguish the

degree to which individual actions might require new thinking, new programs and new resources.

The Financial Framework

Over the next five years the financing for about $9.6 billion for capital programs will come from a combination of federal funds and the New Jersey Transportation Trust Fund (TTF). The TTF, which covers $3.5 billion of that total, has had to shift from a pay-as-you-go program to issuing bonds in recent years to cover the increased needs and lowered levels of legislative appropriations. Revenues to cover the debt are derived from motor vehicle gasoline taxes, motor vehicle fees, general revenues, and toll authority contributions.

In the long term, the level of transportation needs, both capital and operating, and the tenuous nature of federal funding will almost certainly require new funding sources. All levels of government and the private sector will need to be involved in decisions about needed revenues. Whatever sources are chosen, they will have to provide adequate revenues, be easy to collect and administer, and be able to gain public acceptance. A clear linkage in the public's mind between the revenue source and the value they receive will be especially critical.

Implementation

Work must begin now to advance **Transportation Choices 2020** to reality. Thirteen actions are highlighted as "showcase actions," representative of the overall strategies and of the pro-active and creative approach **Transportation Choices 2020** is taking. All these actions can be implemented in the short term. The implementation steps, the responsible parties, and the time frames are provided. These showcase actions are listed below.

Cash for Clunkers - a program designed to remove the oldest, most polluting cars from the statewide fleet.

Consumer Response Program - a process to receive, set priorities, and track customer complaints or needs, using applicable technologies to facilitate service delivery and monitoring.

Incident Response Teams - a systematic approach to establish protocols for all response team participants to minimize travel delays from accidents and breakdowns on the transportation network.

Market-Based Congestion Pricing - demonstration initiatives to establish effective price differentials to charge for premium use and to manage travel on selected facilities.

Priority to Key Freight Access Routes - a program to identify impediments on key facilities for freight access to ports and intermodal terminals and to give high priority to actions to address the impediments.

Electronic Collection of Highway Tolls - a systemwide method for non-stop collection of highway tolls in debit cards or tags via current technology.

Electronic Collection of Transit Fares - a regional transit system automated toll collection for all services, regardless of jurisdiction, using emerging "smart card" technology.

Statewide Stolen Car Recovery Program - a program created by public/private partnership to provide tracking devices at vehicle registration to retrieve stolen cars.

MV Transactions via Electronic Media - conversion of in-person and mail transactions to phone or personal computer transactions, with credit cards as payment, using current and evolving technologies.

Community Resource - a program of outreach to counties/municipalities to support integrated land use and transportation practices, including education, data and analysis.

Community Award - a recognition award program for sound local transportation/land use practice.

Corridor and Area Management Partnerships - a policy and program of proactive engagement with external stakeholders in transportation problem solving, creating explicit partnerships to explore, evaluate, recommend, and implement solutions.

Goods Movement Education Campaign - an aggressive public campaign, designed in collaboration with freight interests, to educate the public about the critical value of freight mobility to economic vitality and growth.

CHAPTER 1 - INTRODUCTION

New Jersey's Transportation System Today

Transportation has always shaped our lives -- in New Jersey and elsewhere. Settlements and commerce were spawned by harbors and rivers. In the 19th century the railroads extended the reach of urban areas to nearby suburbs and across the state and nation. Interurban rail systems and trolleys created communities beyond the urban core wherever they stopped. In the 20th century and particularly after the Second World War, the automobile made it possible to settle wherever a road was placed, giving access to virtually all of the countryside. This led to the spread of development patterns we see today and the loss of much of the railroad and trolley system of the past. These trends have shaped New Jersey as much or more than they have any state in the nation.

Today, New Jersey depends on a vast system of transportation -- operated and maintained by many different entities -- to provide us with the means to reach our jobs and schools, to shop, and to serve our personal and recreational needs. It also carries the goods necessary for our economy to function. The road network is used for the vast majority of personal travel and goods movement in New Jersey. As an example, over nine of every ten work trips are made on this road network. While most of these trips are in automobiles, many are in buses, and more than four percent walk or bicycle to work using the road network.

New Jersey's public and private transit network consists of over 200 bus routes, eleven commuter rail lines, two rapid transit systems, one light rail line, and eight ferry services. Paratransit services provide an array of special services that regularly scheduled transit cannot serve. Separate or shared facilities for bicycles and sidewalks, although limited, help to supplement the network for personal travel.

The intercity passenger transit system includes air, rail, and bus. Newark International Airport and Atlantic City International Airport serve almost 28 million passengers annually. Amtrak provides frequent intercity rail services along the Northeast Corridor between Washington and Boston, and connects to other points along the Amtrak national network. Intercity bus service is also available at many New Jersey locations. Charter services abound, particularly servicing Atlantic City and the gaming industry.

The movement of goods in New Jersey -- 270 million tons annually -- largely depends on the state's highway network. Rail freight is moved by Conrail and several other carriers. Shipping is keyed to the ports of Newark and Elizabeth, and the Delaware River ports. Air cargo is growing at Newark International Airport, and numerous facilities exist for transferring goods among modes. These intermodal facilities provide the flexibility to move freight in the state.

Transportation Choices 2020

State legislation requires a new long-range transportation plan every five years. This periodic re-evaluation of the extensive transportation network and services in New Jersey assures timely initiation of measures to keep our system up to the job it is called on to do. This plan is an update of the 1989 New Jersey Transportation Plan. Entitled **Transportation Choices 2020**, this plan looks ahead a full generation, because choices we make today will determine what kind of transportation New Jersey will enjoy 25 years from now.

Planning for the future needs of a vast transportation system is no small undertaking. And it cannot be done in a vacuum. There are differing values, competing needs and limited resources. Each of these shapes our choices for the future. The plan benefits from reaching out to the public at key milestones during its development, asking the citizens of the state to contribute to the decisions about the direction they wish to take. Beyond that, this plan -- **Transportation Choices 2020** -- will put forth a contract between New Jersey's citizens and its transportation providers. Any plan must start by understanding what the users of the transportation system -- the customers -- want from it. But customer input brings with it a responsibility to help implement the plan -- by adopting its principles, and accepting the consequences -- the benefits, costs, impacts, and risks.

The Planning Process and the Plan

Transportation Choices 2020 will guide transportation policies and investments in the state for the next generation. It must be far-reaching and bold -- anticipating changes in our society, whether they be in technology; in the make-up of our population; in our industries; in the way we work, shop and play; or in our expectations and our attitudes. Because there is uncertainty about what all these changes will be, the plan will need to be devised differently than in the past, and it must be re-evaluated frequently.

Transportation Choices 2020 offers bold solutions to our transportation problems where new responses are needed, including recommendations that go beyond the traditional purview of transportation providers. Yet, the plan does not propose change just for the sake of change. The plan tries to reach for the plausible, yet not seek the impossible. The plan tries to overcome the natural and understandable tendency to think "short term." We must try to "stretch the envelope" in which we operate, and develop new ideas and new ways of doing business.

This plan provides policy guidance, rather than a "set of lines on a map." Such guidance will advance the process of putting the lines on the map, in a way that is more coordinated, more inclusive, more responsive and more comprehensive. This means that transportation providers -- both public and private -- are part

of the process of making decisions. It means that all users of the transportation system -- its customers -- guide the plan, based on what they need and expect from their transportation system. It means that all who are impacted by the transportation system, in ways such as our ability to earn a living or our quality of life, are asked to participate in the process.

Format of the Plan

The accompanying flow chart (Exhibit 1) illustrates the process by which **Transportation Choices 2020** has been developed. Shaded boxes indicate the key components of the plan.

The existing transportation system is described in Chapter 2. Baseline material describes the current state of the transportation system, and serves as basic input to the process. It also describes the demographic and economic changes occurring in the state's population, the institutions responsible for providing transportation services, and the changes occurring in technology that affect transportation.

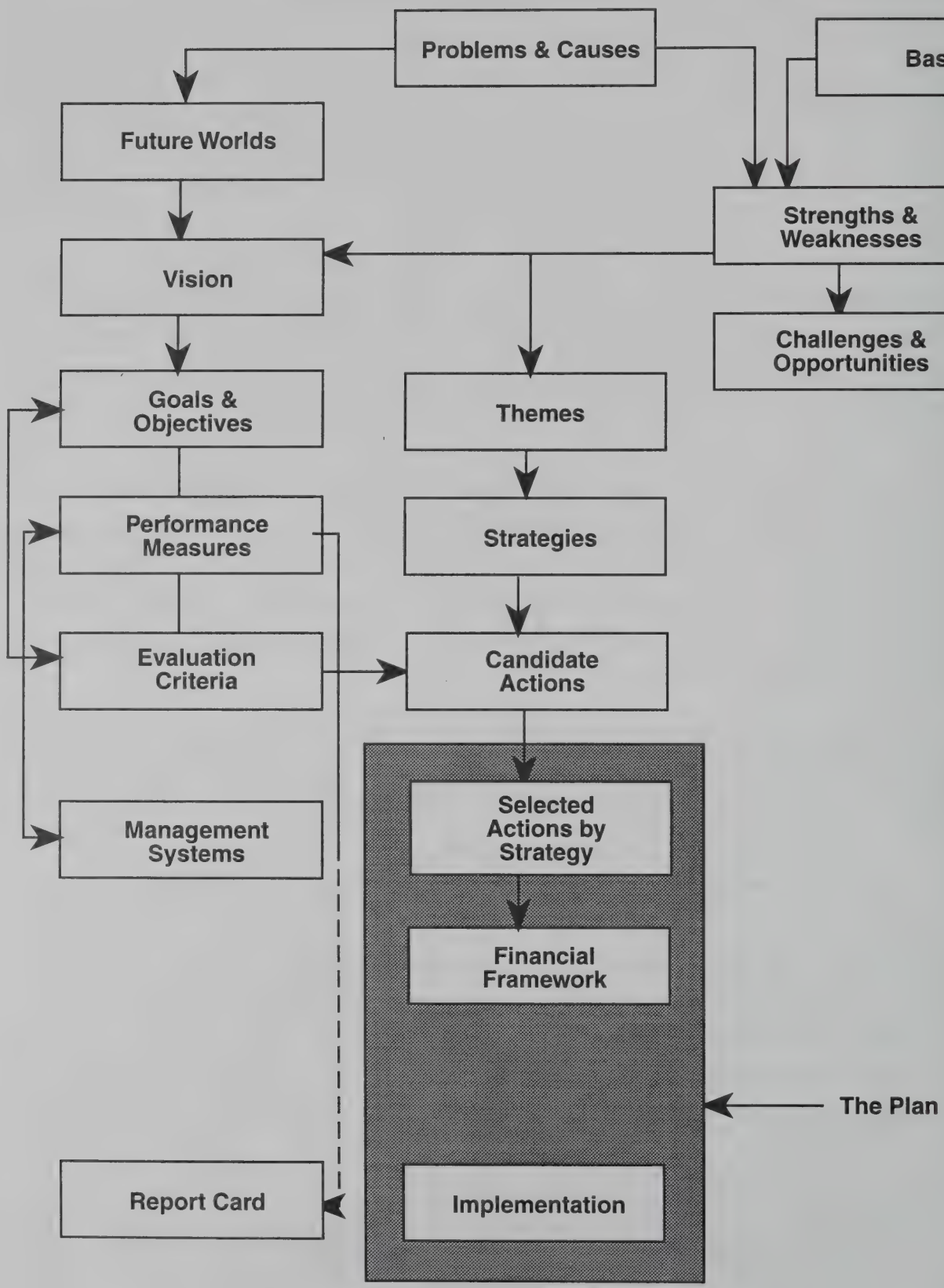
The insights gained by asking the public what they perceive to be the transportation problems and their causes are also important. The baseline and the identified problems and causes help characterize the strengths and weaknesses in the transportation system. These are presented in Chapter 3. When strengths and weaknesses, in turn, are redefined, they become challenges and opportunities. The question can then be asked, "What can we do to build on our strengths and overcome our weaknesses?" The challenges and opportunities are presented in Chapter 4.

The plan has sought direction from the customers at each step of its development, through an unprecedented program of public involvement, which is documented in Chapter 5. This program has included:

- Newsletters, which communicated to the public the **Transportation Choices 2020** process as it was unfolding;
- Surveys, which measured attitudes about New Jersey's transportation system;
- Focus groups, where average citizens gave their opinions and perceptions of what is wrong with the transportation system and how to fix it;
- Issue groups, which represented a wide range of concerns and interests in transportation;
- Regional forums, which were informal sessions in a variety of settings to gain insights from the average citizen;
- An internal involvement process, or "inreach," to the on-line employees of the two key transportation providers, NJDOT and NJ TRANSIT; and
- "Future Worlds" workshops, where a variety of stakeholders were asked to describe possible future scenarios and a vision for the state and its transportation system.

EXHIBIT 1

Statewide Long-Range Transportation Plan
Planning Process Flow Chart



Note: Shaded boxes indicate Long-Range Plan Document Sections

The Future Worlds process began defining the kind of New Jersey people would like in 2020. This "visioning" process was then continued by the issue groups and inreach groups, helping to shape the preferred vision presented in Chapter 6. The goals and objectives for transportation, reflecting both the strengths and weaknesses and challenges and opportunities, are also presented in Chapter 6.

The flow of activities splits into parallel tracks at this stage. In the first track, the goals and objectives lead to a set of performance measures. The performance measures will be used to evaluate how the actions selected for the plan, when implemented, are meeting its goals and objectives. A report card will present the results of this comparison. These will be used to test how well the objectives are being met.

Evaluation criteria permit the best choices to be made among candidate actions for the plan. The evaluation criteria were formulated to be consistent with the goals and objectives.

Meanwhile, the vision and challenges and opportunities were used to define a set of themes for the plan -- it should be customer-guided, stress partnerships, be market-oriented, accommodate diversity, and improve the economy and quality of life. These themes helped formulate eight major strategies for improving transportation. Specific candidate actions were then selected. The two tracks came together at this point, as the evaluation criteria were used to evaluate actions and select new actions to initiate, existing actions to emphasize and others to continue but improve. These actions are presented in Chapter 6. Thirteen specific actions, called "showcase actions," have been highlighted for early implementation. They are presented in Chapter 8.

Financing is a critical aspect of realizing **Transportation Choices 2020.** Both short- and long-term funding frameworks for the plan's strategies and actions are presented in Chapter 7. Renewal of the Transportation Trust Fund is the most immediate funding action required. Financial considerations to implement the strategies are also outlined in Chapter 7.

The Intermodal Surface Transportation Efficiency Act, or ISTEA (described in greater detail in the next section), requires that each state establish six management systems --- bridges, pavement, safety, transit, intermodal, and congestion management. These systems are geared to allow informed decisions to be made about transportation expenditures. In part, the work of the management systems can be used to track progress in meeting the plan's objectives. The six management systems will use these and other performance measures to improve their decision-making. A report card is proposed in Chapter 8 to inform the public about the rate of system performance improvement.

From this process, a "contract" is made between the customer and the providers of the transportation system. This contract will set a course of action for the short- and long-terms -- a set of themes and policies the state of New Jersey can use to emphasize the directions we wish, as a state, to take. This contract is

made to pursue courses of action. Like all contracts, it can be extended or renegotiated periodically as customer needs, and other conditions, warrant.

Themes

Several broad themes are basic to this plan. First, those who build and operate the transportation system, and plan for its future, do not always understand the range of concerns and frustrations of the system's users. This points to the need to continually reach out to the customer. Conversely, the customer is not always aware of the limitations, constraints or restrictions placed on transportation providers. Two-way communication between both groups and education is needed to ensure a customer-guided plan.

Second, the abundance of public and private players in an arena as complex as transportation requires that these players work together. Partnerships must be formed if progress is to be made. These may range from the obvious -- better coordination among state agencies -- to the relatively untried -- businesses working with government to meet mutual goals.

Third, market-based and other business practices are a potentially powerful source of change in the transportation sector. Creating financial incentives for both the provider and the user of transportation can lead to more and better services.

Fourth, the transportation needs of New Jersey's citizens vary as much as the citizens themselves. We require a variety of solutions to meet all our transportation needs. We are an urban, suburban, and rural state all at the same time. We have communities that are among the wealthiest in the nation, and others that are among the poorest. We have unprecedented levels of mobility provided by the private automobile, yet one in seven households does not own one.

Finally, the strength of New Jersey depends on the strength of its economy and the quality of life of its citizens. Ultimately, if we are to improve the quality of our lives, we must have jobs, and we must have a plan whose actions help strengthen our economy.

Mandates for Transportation Choices 2020: ISTEA, CAAA and SDRP

In addition to the state requirement for a transportation plan, there are federal mandates. In 1991 Congress passed the Intermodal Surface Transportation Efficiency Act (ISTEA), a major transportation bill intended to guide transportation policy, funding and spending in the nation for a five-year period. ISTEA requires states to produce a transportation plan every three years. The plan must "explicitly consider" 23 factors and

a number of issues. These factors are reproduced from the legislation in the accompanying box (Exhibit 2). The Appendix discusses how and where each of the 23 factors is addressed. **Transportation Choices 2020** is designed to encompass the factors that ISTEA requires that are relevant to New Jersey, and most importantly, to reach out to the public in a way that provides valuable guidance from the customers of the transportation system.

The plan's policy direction is also shaped by the federal Clean Air Act Amendments of 1990 (CAAA) and the State Development and Redevelopment Plan (SDRP). The CAAA recognize that emissions coming from motor vehicles contribute significantly to air pollution. The law states that highway expansion cannot occur unless it can be shown that any added pollution can be offset. Moreover, the CAAA require that states with air pollution problems as severe as New Jersey's must have major employers institute plans to reduce single-occupant auto commuting. As a result, **Transportation Choices 2020** espouses public policies that encourage transit, non-motorized mobility options and alternative working arrangements (i.e., telecommuting and compressed work weeks), and ridesharing. How to improve the economy and the quality of life, while meeting this mandate in New Jersey, is a key challenge for **Transportation Choices 2020.**

The State Development and Redevelopment Plan was forged through a statewide effort that began in 1985 and culminated in its adoption by the New Jersey's State Planning Commission in 1992. An Executive Order of the Governor in 1993 required all state agencies to comply with the SDRP. Through coordinated state, county and local planning, the SDRP policies encourage growth and investment in areas of the state where infrastructure has the capacity to support development, allowing more efficient use of transportation and other public expenditures. Growth is to be focused in designated centers and other concentrations of activity. The SDRP gives the state the opportunity to plan New Jersey's transportation systems and land use together, to create the kind of state present and future citizens wish to live in.

The federal transportation and clean air mandates and the SDRP furnish New Jersey with the tools to forge a new and creative set of policies to guide the development of the state's transportation system for the next generation. **Transportation Choices 2020** sets forth the transportation and related programs and policies that will help us prosper amid a high-quality environment for all New Jerseyans.

EXHIBIT 2
ISTEA REQUIRED STATEWIDE TRANSPORTATION PLANNING FACTORS

1) The transportation needs (strategies and other results) identified through the management systems required by 23 U.S.C. 303;

2) Any Federal, State, or local energy use goals, objectives, programs, or requirements;

3) Strategies for incorporating bicycle transportation facilities and pedestrian walkways in appropriate projects throughout the State;

4) International border crossings and access to ports, airports, intermodal transportation facilities, major freight distribution routes, national parks, recreation and scenic areas, monuments and historic sites, and military installations;

5) The transportation needs of nonmetropolitan areas (areas outside of MPO planning boundaries) through a process that includes consultation with local elected officials with jurisdiction over transportation;

6) Any metropolitan area plan developed pursuant to 23 U.S.C. 134 and section 8 of the Federal Transit Act, 49 U.S.C. app. 1607;

7) Connectivity between metropolitan planning areas in other States;

8) Recreational travel and tourism;

9) Any State plan developed pursuant to the Federal Water Pollution Control Act, 33 U.S.C. 1251 et seq. (and in addition to plans pursuant to the Coastal Zone Management Act);

10) Transportation system management and investment strategies designed to make the most efficient use of existing transportation facilities (including consideration of all transportation modes);

11) The overall social, economic, energy, and environmental effects of transportation decisions (including housing and community development effects and effects on the human, natural and manmade environments);

12) Methods to reduce traffic congestion and to prevent traffic congestion from developing in areas where it does not yet occur, including methods which reduce motor vehicle travel, particularly single-occupant motor vehicle travel;

13) Methods to expand and enhance appropriate transit services and to increase the use of such services (including commuter rail);

14) The effect of transportation decisions on land use and land development, including the need for consistency between transportation decision-making and the provisions of all applicable short-range and long-range land use and development plans (analyses should include projections of economic, demographic, environmental protection, growth management and land use activities consistent with development goals and transportation demand management projections);

15) Strategies for identifying and implementing transportation enhancements where appropriate throughout the State;

16) The use of innovative mechanisms for financing projects, including value capture pricing, tolls, and congestion pricing;

17) Preservation of rights-of-way for construction of future transportation projects, including identification of unused rights-of-way which may be needed for future transportation corridors, identification of those corridors for which action is most needed to prevent destruction or loss (including strategies for preventing loss of rights-of-way);

18) Long-range needs of the State transportation system for movement of persons and goods;

19) Methods to enhance the efficient movement of commercial motor vehicles;

20) The use of life-cycle costs in the design and engineering of bridges, tunnels, or pavements;

21) The coordination of transportation plans and programs developed for metropolitan planning areas of the State under 23 U.S.C. 134 and section 8 of the Federal Transit Act with the stateside transportation plans and programs developed under this subpart, and the reconciliation of such plans and programs as necessary to ensure connectivity within transportation systems;

22) Investment strategies to improve adjoining State and local roads that support rural economic growth and tourism development, Federal agency renewable resources management, and multipurpose land management practices, including recreation development; and

23) The concerns of Indian tribal governments having jurisdiction over lands within the boundaries of the State.

Each State shall at a minimum, explicitly consider, analyze as appropriate, and reflect in planning process products the above factors in conducting its continuing statewide transportation planning process.

Partners in Long-Range Transportation Planning

NJDOT's **Transportation Choices 2020** planning effort has not proceeded in isolation. Its work has been complemented by the long-range planning activities of four other public agencies. In particular, NJ TRANSIT is developing **Transit Futures**, the public transit component of the plan. Together with the public transportation management system, **Transit Futures** is preparing a detailed baseline and transit services assessment.

The state's three metropolitan planning organizations (MPOs) are responsible for developing long-range plans for their regions. MPOs are cooperative regional planning organizations of local governments and state and federal agencies. The Delaware Valley Regional Planning Commission is developing its plan, **Direction 2020**; the North Jersey Transportation Planning Authority is preparing a Regional Transportation plan for Northern New Jersey; and the South Jersey Transportation Planning Organization is in the process of developing its Regional Transportation Plan. Member counties of the three MPOs are listed in the accompanying box and delineated in the accompanying map (Exhibits 3 and 4).

Many of the factors to be considered by MPOs are the same or similar to those of this plan. While both the state and MPO plans set directions for investment decisions, the MPOs place a greater emphasis on preparing a physical plan to be the basis for developing their region's Transportation Improvement Program (TIP), an annual multi-year capital program of projects that are eligible for federal funding. Yet the need for coordination between MPO plans and **Transportation Choices 2020** is real, because transportation systems and issues do not conform to political boundaries. Coordination throughout the implementation of **Transportation Choices 2020** will ensure compatibility among these plans.

EXHIBIT 3

NEW JERSEY METROPOLITAN PLANNING ORGANIZATIONS

South Jersey Transportation Planning Organization (SJTPO)
- Atlantic County
- Cape May County
- Cumberland County
- Salem County

Delaware Valley Regional Planning Commission (DVRPC)
- Burlington County
- Camden County
- Gloucester County
- Mercer County
- DVRPC also includes 5 Pennsylvania counties

North Jersey Transportation Planning Authority (NJTPA)
- Bergen County
- Essex County
- Hudson County
- Hunterdon County
- Middlesex County
- Monmouth County
- Morris County
- Ocean County
- Passaic County
- Somerset County
- Sussex County
- Union County
- Warren County

EXHIBIT 4: METROPOLITAN PLANNING ORGANIZATION (MPOs)

CHAPTER 2 - THE EXISTING NEW JERSEY TRANSPORTATION SYSTEM

New Jersey is served by a complex system of road, rail, air and port facilities and services. Millions of people and goods move each day, supporting our economy and way of life.

Highways

New Jersey's 34,000-mile road network extends to every part of the state. Roads and streets are, perhaps, the most intermodal part of the transportation system, carrying passengers by auto and bus and carrying freight by truck to their destinations or to other transport modes; carrying freight by truck to its destinations and to other modes. They also provide mobility for pedestrians and bicyclists.

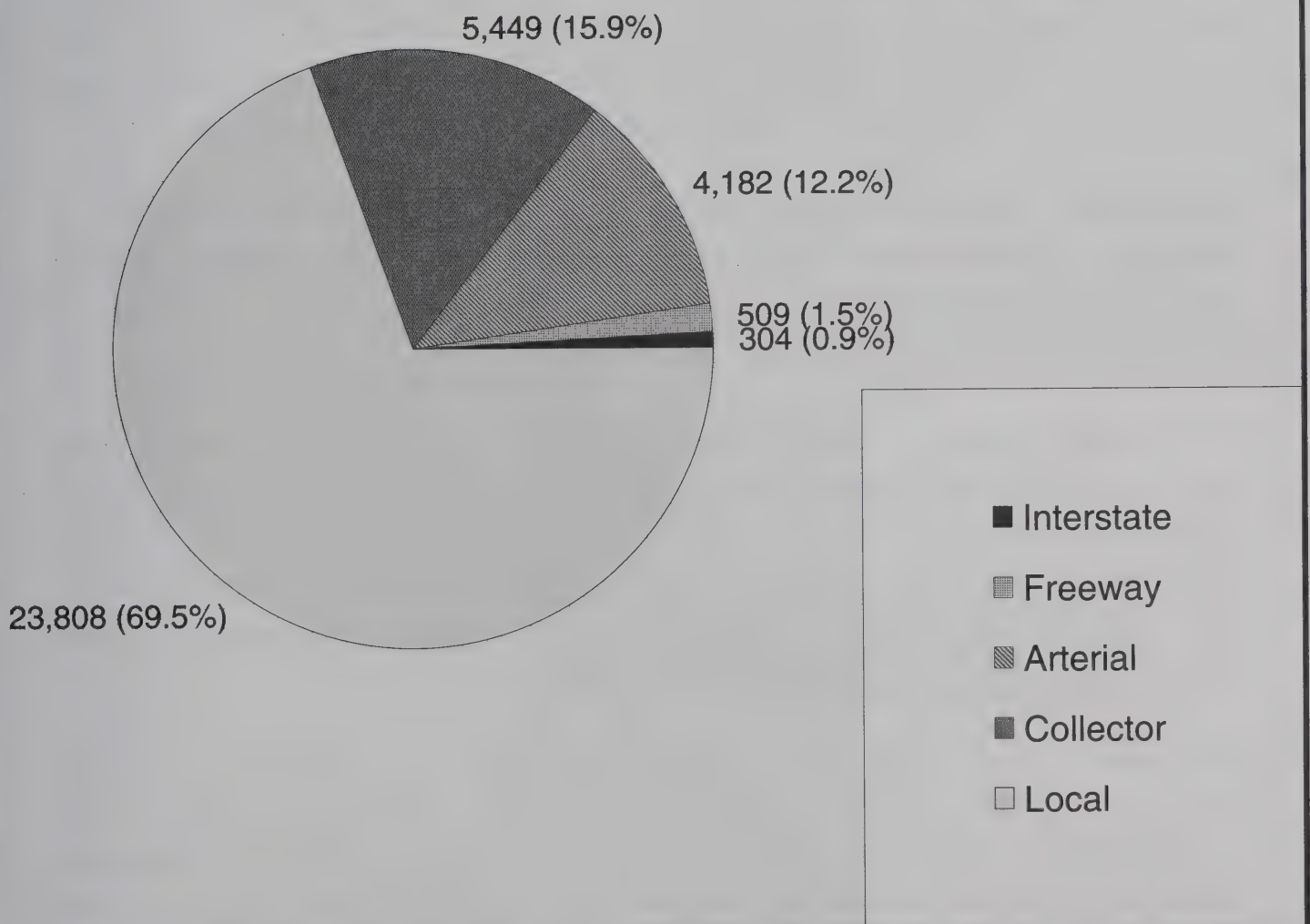
Of the total network, two and one-half percent, or about 800 route miles, is interstate, freeway, or expressway. These are under the jurisdiction of NJDOT and state or interstate commissions and authorities. Twelve percent is classified functionally as arterial, carrying significant volumes of long-distance traffic but also serving adjacent land; these roads are generally under state or county jurisdiction. Sixteen percent is classified as collector, and carries lower volumes on generally shorter trips. Serving adjacent land is more important on these routes than on arterials; these roads are generally under county or municipal jurisdiction. In total, these three functional categories constitute less than one third of the state's road system. The majority -- 70 percent of the total highway mileage in the state -- is classified as local roads or streets and is generally under municipal jurisdiction (Exhibit 5).

NJDOT has proposed a 1,948-mile network to be part of the National Highway System under ISTEA, for which federal standards will be set and federal funds will be allocated. It consists of major interregional routes and connector roads to intermodal freight and passenger terminals and to northern and southern New Jersey ports. The proposed network is largely within the jurisdiction of NJDOT and the special commissions and authorities, but includes some connector roads under local jurisdiction.

The State Highway System consists of nearly 2,300 route - miles of highway under the jurisdiction of NJDOT, including most of the federally designated Interstate Highway System. County routes total almost 6,900 route miles, and municipal streets and roads account for 24,700 route miles. While they are 6.7 percent of all highway mileage, state highways account for 13.8 percent of all lane miles. Just over 400 miles are under the jurisdiction of special authorities and commissions. The three major toll roads -- the NJ Turnpike (132 miles), the Garden State Parkway (175 miles), and the Atlantic City Expressway (44 miles) -- accounted for

EXHIBIT 5

Statewide Route Mileage of Highways



Source: NJDOT

a volume of 587 million vehicles in 1990, and total revenues of nearly $380 million. The Palisades Interstate Parkway provides an 11-mile roadway for non-commercial vehicles which extends north into New York State. NJDOT maintains the New Jersey portion of this roadway (Exhibit 6).

About 2,500 of the 6,000 bridges in New Jersey are under NJDOT's jurisdiction. About 2,350 are under the jurisdiction of counties and municipalities. Authorities and commissions are responsible for about 1,200 more. Five different authorities or commissions oversee the operation of 31 interstate river crossings. Over its four bridges and through two tunnels, the Port Authority of New York and New Jersey (PANYNJ) served 225 million vehicles -- more than half the total number of interstate crossings -- in 1990. Other interstate authorities include: the Delaware River Port Authority (92 million vehicles in 1990); Delaware River Joint Toll Bridge Commission (38 million); Delaware River and Bay Authority (27 million); and Burlington County Bridge Commission (38 million).

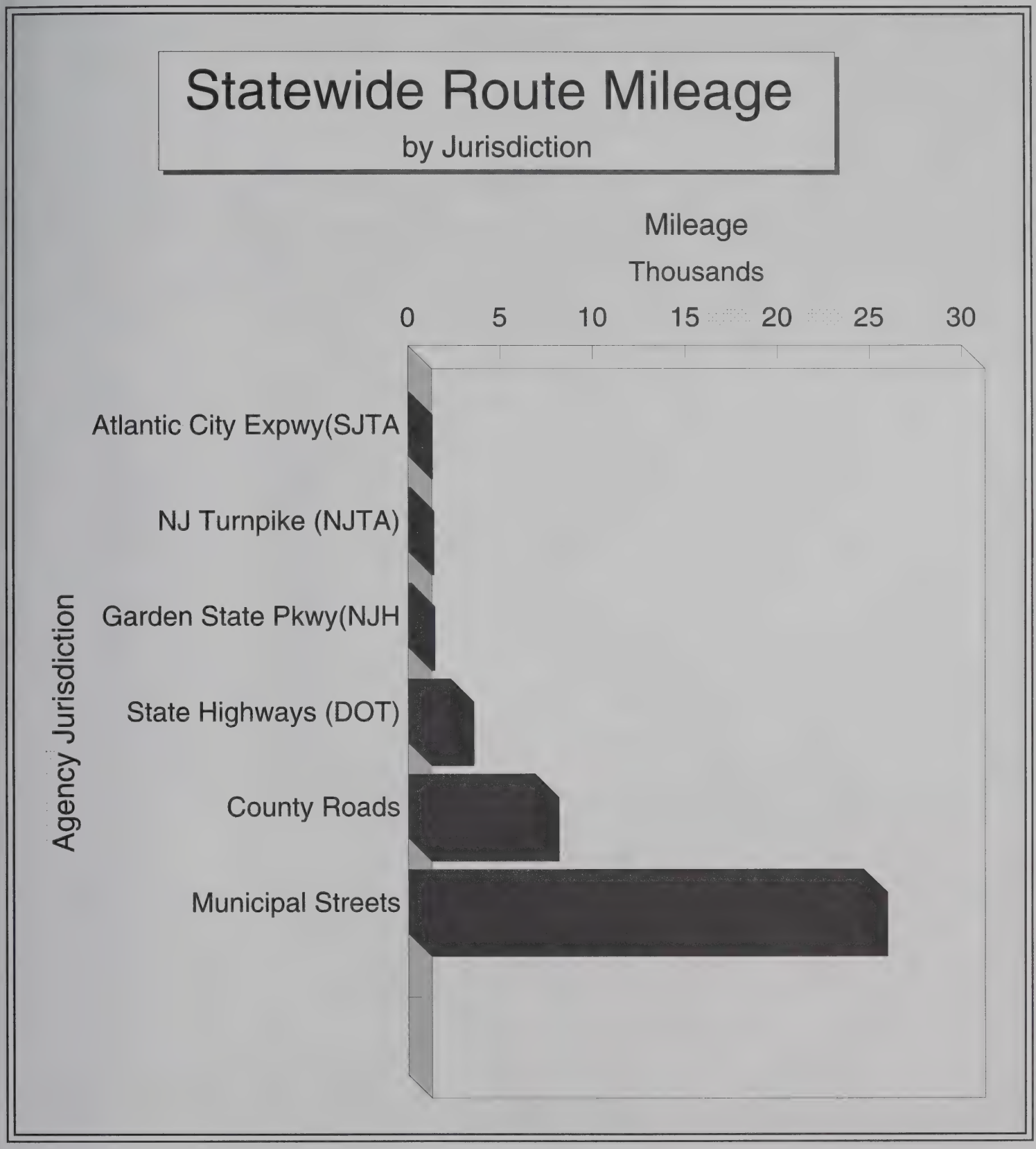
Of the approximately 5.7 million vehicles registered in the state in 1990, 90 percent were passenger cars, 8 percent trucks, 2 percent motorcycles, and less than one percent buses. Since 1960, state vehicle registrations have increased by 3.2 million, or 130 percent. By 1990, the majority of New Jersey's households owned two or more vehicles. In some counties, 25 percent of the households owned three or more. The average ratio of vehicles per household was 1.6 in 1990.

Vehicle miles of travel (VMT) is the chief measure of highway use. Statewide annual VMT grew by approximately 170 percent between 1960 and 1990, to 60 billion VMT. By comparison, statewide population grew by 27 percent and the labor force increased 62 percent in the same period. Clearly, traffic is growing far more rapidly than population, or the number of workers.

As noted earlier, highways under state jurisdiction include the major traffic arteries of the state. While they account for less than seven percent of statewide highway miles, they constitute 40 percent of all VMT. Currently, almost 30 percent of state highway miles operate at severely congested levels, carrying volumes greater than their designed capacity. This reflects, to a degree, the significance of New Jersey as a corridor state between New England and New York on the north and east and Pennsylvania and states to the south and west (Exhibit 7).

Many pedestrian and bicycle trips occur on public streets and highways. In cities, more than ten percent of residents walk or bicycle to work. Four percent of employee work trips are made by walking or biking to work statewide. Almost eight percent of all daily trips are currently made by these benign travel modes. Exhibit 8 shows a breakdown of work trip modes based on 3.8 million employee work trips. Many more

EXHIBIT 6



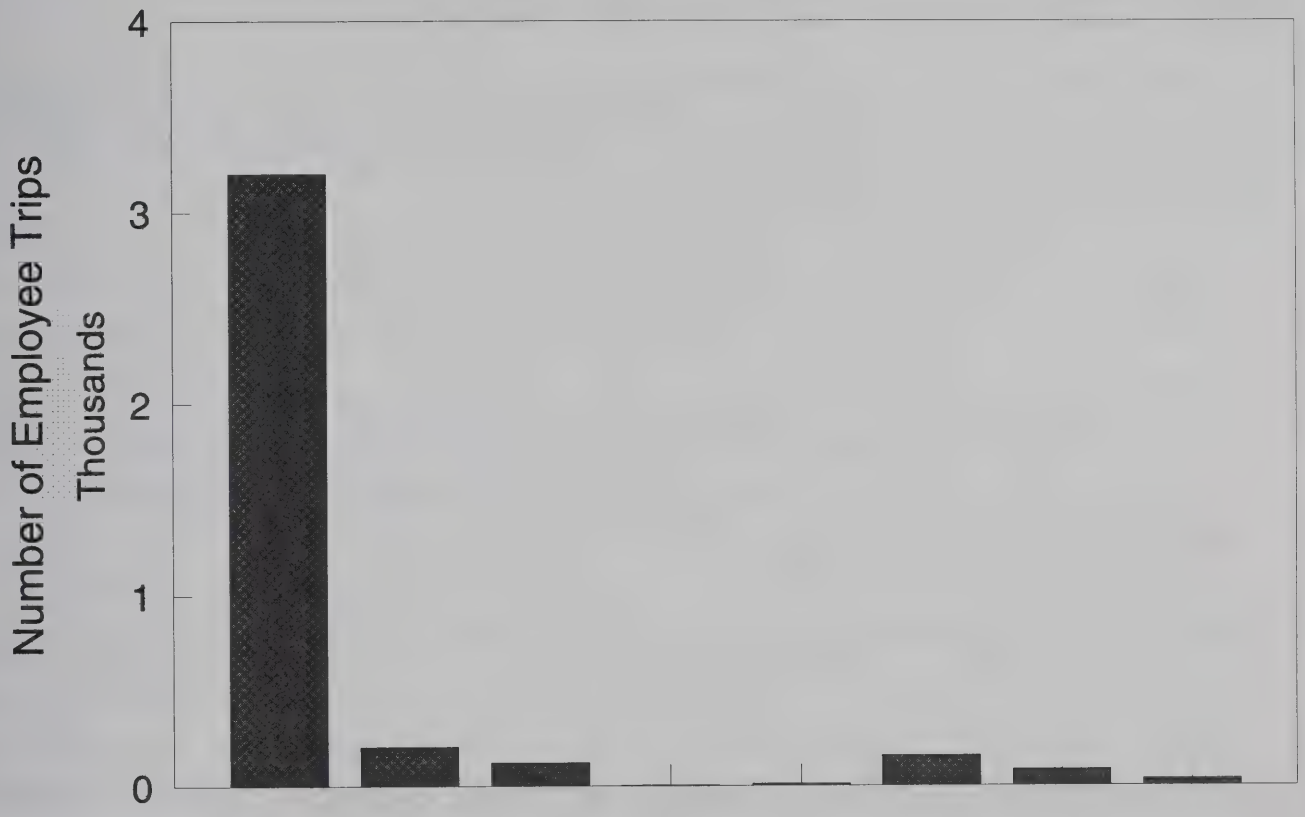
Source: NJDOT

EXHIBIT 7: MAJOR HIGHWAY ROUTES

EXHIBIT 8

Work Trip Mode

1990 Census



Travel Mode	Car	Bus	Rail	Ferry	Bike	Walk	Home	Other
	3,203	206.1	121.2	2.5	9.1	156.5	80.4	33.5

Note: Car (car, van , truck)
Note: Other (taxi, motorcycle, other)

Source: 1990 CTPP

trips could be made by bicycle and walking if land development patterns were more accommodating and if highways could be managed and designed so as to not create barriers to pedestrian and bicycle circulation.

Persons without access to cars, or who are unable to drive, are especially dependent on walking and bicycling. These persons include both children and elderly adults. Walking, jogging, and bicycling along streets, roads, and highways also constitute important recreation activities in New Jersey and must be accommodated.

Public Transit

Some 275,000 passengers are served every day by New Jersey's statewide public and private transit operations. They travel to and from work, school, shopping, and other activities by commuter rail, rapid transit, light rail, bus and ferry (Exhibit 8).

Rail Transit

NJ TRANSIT operates a 426-mile commuter rail network, one of the largest in the nation. The network carries 42 million passengers annually who board 12 rail lines at 157 stations largely in central and northern New Jersey. The fleet includes 700 passenger cars and some 100 locomotives which operate as almost 600 commuter trains on an average weekday.

NJ TRANSIT's commuter rail system was taken over in 1983 from Conrail, which in turn had inherited it from a number of competing railroads. Most of the lines center on Newark, Hoboken, and New York. The Northeast Corridor line runs from Trenton to Newark and Penn Station-New York. This electrified line provides more service and carries more riders than any other NJ TRANSIT line. The North Jersey Coast Line and the Raritan Valley Line join the Northeast Corridor Line at Rahway and Newark, respectively. Seven other lines or branches serve northern New Jersey and terminate at Hoboken: three branches of the Morris and Essex Lines; the Boonton Line; and the Main Line, Bergen County Line and Pascack Valley Line. The system is undergoing substantial expansion, upgrading, and integration. For example, the Kearny Connection, now under construction, will make it possible for trains on the heavily used Morris and Essex lines to go directly into Penn Station-New York without transfers. The Secaucus Transfer, which will soon begin construction, will provide a new transfer station in the Meadowlands from the Bergen-Main and Pascack Valley Lines to the Northeast Corridor Line. NJ TRANSIT's Atlantic City Line connects Atlantic City,

through Cherry Hill, with Philadelphia's 30th Street Station. Service to Philadelphia is available at Trenton on SEPTA.

Several smaller lines serve some of New Jersey's urban areas. NJ TRANSIT carries 4 million passengers annually on the four-mile Newark City Subway, a light rail line. The 14-mile PATH rapid transit service to and from Newark, Hoboken, Jersey City, and New York City, and the 14-mile PATCO rapid transit service to and from Lindenwold, Camden, and Philadelphia carry 60 million and 11 million riders annually, respectively.

Bus

NJ TRANSIT operates almost 1,900 buses on an extensive bus network that both provides statewide service and connects riders with New York City and Philadelphia. Operating a total of 170 bus routes and traveling some 76 million miles annually in urban, suburban and rural areas, NJ TRANSIT's bus system carries 126 million riders each year, and serves the state's major cities with commuter runs to and from Newark, Jersey City, Trenton, Atlantic City, Camden, New York City, and Philadelphia. It provides special services to major magnets such as shopping centers, Atlantic City, the Meadowlands, the Jersey Shore, and Great Adventure.

NJ TRANSIT offers three major types of bus service to customers:

- Local transit - intra-city service with frequent stops;
- Longer-distance suburban - service that originates a minimum of 12 miles from a major destination, with express service offered for at least the last four miles of the trip; and
- Shorter-distance suburban - commuter service usually originating and/or ending at a major terminal.

Private transportation providers carry some 50 million riders annually. NJ TRANSIT provides operating assistance, buses and maintenance equipment to many of these operators.

An exclusive bus lane operates in the morning rush hours on the approach to the Lincoln Tunnel and the Port Authority Bus Terminal in New York City. NJ TRANSIT and private carrier buses use this lane to transport more than 52,000 passengers to New York each working day. It is by far the most heavily used bus lane in the nation.

New types of demonstration services are being initiated by NJ TRANSIT. In the WHEELS program, for example, special bus services established in partnership with employers make suburban employment locations accessible from rail stations.

Ferry

There are four commuter ferry services from New Jersey to Manhattan. The largest in volume is the Hoboken to World Trade Center ferry, reinstituted in 1988 by the PANYNJ. Operated by private contract, this ferry supplements PATH service, and serves bus and auto transfers and local walk-ons. Two other private ferry services operate between Weehawken and midtown and lower Manhattan. A private ferry service takes a direct route from Monmouth County to lower Manhattan.

Three other ferries in New Jersey cater largely to non-commuter markets: the Cape May-Lewes, Delaware, ferry carries interstate vehicle traffic and recreational riders; the Liberty State Park ferry operates to both Liberty and Ellis Islands; and the New Jersey State Aquarium ferry operates between Philadelphia and Camden for recreational riders.

Park-and-Ride and Demand Management

Parking lots have been developed at many peripheral locations to serve transit riders, carpoolers, and vanpoolers. They substantially extend the service area of public transit for those who have a car. Park-and-ride lots developed by NJDOT also serve as meeting places for ridesharing. High-occupancy vehicle (HOV) lanes for autos with two or more occupants have been built on I-80 and are planned for I-287.

Efforts have been under way for some time to encourage carpooling, vanpooling, staggered work hours, flextime and other means to reduce the volume of peak hour travel. NJDOT and nine transportation management associations in New Jersey provide ridesharing alternatives to the single-passenger auto commute. These efforts have accelerated with the state's Employee Trip Reduction Program (ETRP).

Paratransit

Paratransit services are a loosely defined set of transportation services including taxis, dial-a-ride services and community-based social services for the elderly and the disabled. They fill a gap that can seldom be cost effectively met by traditional fixed-route transit services. For the most part, they provide services to

those without an automobile, or other alternatives. NJ TRANSIT has a program of providing vehicles to non-profit groups for such special services.

Intercity Passenger Service

Intercity passenger service is provided to New Jersey by air, rail, and bus.

Air

The most heavily used airport in New Jersey is Newark International Airport. Being close to Manhattan, Newark serves considerable amounts of New York as well as New Jersey travel. Newark Airport has been a major facility in the New York metropolitan region since the 1930s. Successive expansions have continued into the 1990s. Passenger volumes at Newark International have increased from about 6 million annually in 1970, to 27 million in 1992. Rail transit access has been discussed for many years, and a people-mover system linked to a Northeast Corridor rail station is scheduled to be completed in the mid-1990s.

Atlantic City International Airport provides air service for business and recreational activity (largely the gaming industry), with a passenger volume in 1992 of nearly one million. The terminal is currently being expanded. Major out-of-state airports serving New Jersey residents include Kennedy International and La Guardia in New York and Philadelphia International in Pennsylvania.

In addition, 55 public-use general aviation airports are located throughout New Jersey. Among the most important are Teterboro, Morristown, Caldwell, and Mercer County.

Rail

Intercity rail passenger service is provided at five New Jersey stations on Amtrak's Northeast Corridor Line. Each year, 585,000 Amtrak passengers board within the state. Each weekday 15 Metroliner trains traveling between New York City and Washington, DC stop at Newark-Penn Station. Metroliners can achieve speeds of 125 miles per hour, making the two-and-one-half-hour downtown Newark to downtown Washington, DC, trip nearly twice as fast as driving, and competitive with air. The Newark station is also a stop for 23 non-Metroliner trains. Service to Trenton is almost as frequent, while New Brunswick, Princeton Junction, and Metropark receive limited service. Amtrak previously operated five round-trips per day between Philadelphia and Atlantic City, with a stop at Lindenwold to transfer to PATCO. As of April, 1995 this rail service was taken over by NJ TRANSIT. Service has been substantially increased from five to twelve round-

trips on weekdays including, nine trains emanating from Philadelphia's 30th Street Station; one from Lindenwold; and two starting from Cherry Hill. Weekend service also includes one additional train each way leaving from Philadelphia and Atlantic City.

Bus

Many intercity bus lines, such as Martz and Greyhound, serve the state. Greyhound maintains a station in Newark-Penn Station, while others have less formal stations. Martz Line services to northeastern Pennsylvania, for example, rely on scheduled pick-ups along key highways. Additional intercity bus service is available to New Jersey residents at the Port Authority Bus Terminal in New York City, and in Philadelphia. In addition to scheduled service, charter bus service is available within and to New Jersey. Charter buses brought nearly 10 million visitors to Atlantic City in 1992.

Freight

The movement of manufactured goods, agricultural and raw materials, fuels and waste products is essential to New Jersey's economy. Freight moves among shippers, processors, consumers, and increasingly between intermodal terminals by truck, rail, air, and water.

Trucking

Highways, of course, serve trucks as well as autos and buses, but some routes serve particularly heavy truck volumes. These include the NJ Turnpike, Routes 1 and 9, I-80, I-287, I-295 and Route 130. Some 30,000 trucks use the PANYNJ crossings to and from New York each day. Some routes, such as the Palisades Interstate Parkway and the northern section of the Garden State Parkway, prohibit trucks entirely; there are weight and clearance restrictions on other highway routes. These impediments cause indirect truck routing. There were over 400,000 commercial vehicle registrations in New Jersey in 1992. The vast majority are personal use vehicles, such as pick-ups and vans, and serve no commercial purpose. Most over-the-road tractor trailers are registered out of state because of tax advantages.

According to the New Jersey Motor Truck Association, trucks transported 158 million tons of freight into and out of New Jersey in 1989. This was an increase of 76 percent since 1982. Trucks transported 64 percent of New Jersey's total inbound and outbound freight volume in 1989; the trucking industry generated an annual payroll that year of just under $10 billion.

Trucks are far and away the dominant transport mode in the intermodal freight business - truck to rail, truck to ship, and truck to air. In North Jersey alone, for example, there are 12 intermodal terminals handling more than 600,000 trailers or containers annually. About 150 million tons of cargo flow into and out of the area by truck. Rail handled 22 million tons in 1990; ships, 57 million; and air, 2 million (relatively low in weight, but high in value).

Rail

Rail freight is carried on an extensive 1,500-mile network. Conrail; the New York, Susquehanna and Western; and the Delaware and Hudson (CP Rail) are the major lines. Conrail alone is responsible for 80 percent of the mileage. Several other short-line railroads operate in part over routes that were abandoned under federal policies of the past 20 years.

While much of bulk goods, raw materials and fuel is carried directly from shipper to processor, an increasing amount of containerized rail cargo is transferred to truck and ship to complete the shipment at various intermodal terminals in both southern and northern New Jersey. The high clearances required for "double stack" container trains are not available on all rail lines serving New Jersey's intermodal terminals.

Air

Air freight is typically low weight or high value. Since all air cargo is time-sensitive, reliable access to airports is critical. Newark Airport is the primary air cargo terminal in the state. In 1992, approximately 650,000 tons of freight moved through Newark, 85 percent of which was domestic cargo. This freight is carried on many passenger aircraft as belly cargo, as well as on all airfreight jets such as UPS, US Postal Service and Federal Express. Philadelphia International Airport handles the principal portion of air cargo destined to or from South Jersey.

Waterborne

There are four public port areas within the state: PANYNJ's Port Newark/Elizabeth, the South Jersey Port Corporation (SJPC) in Camden, the Port of Salem and the Port of Bridgeton. Continued improvements to the PANYNJ of Port Newark/Elizabeth facilities have made it the primary container port on the East Coast. In 1992, the Port Newark/Elizabeth complex handled about 17.6 million tons of all types of cargo. When private and New York facilities are included, 38 million tons moved through the Port of New York as a whole in 1992, with an estimated value of $55 billion. Because of environmental restrictions on the disposal of dredge spoil, the channel depth here and in other locations is no longer adequate for fully laden ships. The resulting limitation on ship size creates a major competitive problem for the entire state.

The SJPC captures about one-third of the Philadelphia port traffic, specializing in scrap metals, food, and building products. The Ports of Salem and Bridgeton are located across from the Chesapeake-Delaware Canal. Both are quite small and need substantial improvement to reach their potential. In addition, there are several private marine terminal facilities in both the northern and southern parts of the state. These include the Global Marine Terminal in Jersey City and the Holt Cargo Systems Terminal in Gloucester City.

Bulk Transport

New Jersey handles a great deal of bulk transportation, all of which is moved by private carrier in North Jersey, and on the Delaware River in South Jersey and the Philadelphia area. In northern New Jersey,

petroleum and chemicals are handled by tanker vessels, tanker rail cars and tanker trucks to and from a large industrial complex along the Arthur Kill. This area is frequently referred to as "the chemical coast." Petroleum is the largest import commodity at the Delaware River ports. In southern New Jersey, in Gloucester and Camden Counties along the Delaware River, significant amounts of imported petroleum products are handled. In addition, oil products and natural gas are handled by pipelines extending into New Jersey from the southwest.

CHAPTER 3 - STRENGTHS AND WEAKNESSES

In this chapter, the strengths and weaknesses of New Jersey's current transportation system are discussed. The strengths provide a system to build on; the weaknesses describe problems to be overcome. Taken together, strengths and weaknesses present us with a set of challenges and opportunities to provide creative solutions.

Strengths

New Jersey's transportation system enables its 7.7 million people to get to and from work, shopping, recreation, education, and other activities. This vast, complex infrastructure is a strength that must be exploited in future transportation improvements.

Highways

With the completion of I-287 and I-295, the network of Interstate and other limited or controlled access roads extends to almost every area of the state. High-speed, high-volume auto, truck and bus travel is provided throughout the state and throughout the day, congestion permitting.

On a per-capita basis, New Jersey has twice the amount of roadway as the nation's average. This network gives us unprecedented access within New Jersey, and to the neighboring states of Pennsylvania, New York and Delaware. Over the past years, NJDOT's programs have steadily increased the capacity and operational performance of arterial routes by applying advanced traffic engineering techniques. NJDOT's annual capital program amounted to one billion dollars in 1994.

Our highways are safer than they have ever been. The number of fatal accidents decreased from 1,075 to 704 between 1988 and 1991. The rate per million vehicle miles decreased even more, from 2.19 to 1.19, even as traffic grew during that period. This improvement reflects a host of traffic safety efforts: expanded driver, bicyclist and pedestrian education; improved regulation and enforcement; less driving while intoxicated; better emergency response to accidents; safer design of new vehicles; greater use of seat belts; sophisticated traffic engineering and roadway and bridge hazard elimination; and the use of safer limited-access highways and transit.

Public Transit

Our transit network is extensive and diverse. It provides a variety of services to those without access to an automobile, and to even more people with cars, who take advantage of its convenience, cost and time savings for commuting. It contains both the fourth largest bus system and the fourth largest commuter rail network in the nation. New Jersey has two of only a dozen rapid transit systems in the United States, as well as a light rail line and numerous ferry routes. NJDOT and NJ TRANSIT have undertaken impressive, continuing programs for rail electrification, station improvements, new vehicles, added express bus and local routes, and expanded park-and-ride lots. The annual capital program of NJ TRANSIT was over $500 million in 1994.

Intercity Passenger Service

We are well-served by our aviation system. Newark International Airport is the eighth busiest passenger airport in the nation, and the 14th busiest in the world. It provides the markets of northern and central New Jersey, and New York City, with easy access to virtually all major national and international markets. Integrated freight carriers, such as Federal Express, Airborne, and UPS, operate from Newark, and the underfloor capacity of passenger aircraft provides nearly ubiquitous service around the globe. The Northeast Corridor's new people-mover connection will increase its competitive advantage. The new Atlantic City International Airport provides scheduled passenger services to South Jersey. General aviation airports throughout New Jersey provide access to corporate and other smaller aircraft.

The intercity passenger rail network serving New Jersey is also a major advantage. Many of the nation's largest population and economic centers are within a few hours ride on the Northeast Corridor Line. Amtrak provides fast, reliable, and frequent service to these and connecting locations. It goes directly to city centers, eliminating an additional trip downtown for most travelers, and connects directly at city centers to extensive regional transit systems.

Freight Facilities

New Jersey's position within the New York-New Jersey-Philadelphia consumer area makes it an ideal area for terminal, warehousing and distribution facilities. The state is the eastern terminus of important freight railroads. Trucking firms find it an attractive location because it is close to huge markets. New Jersey is also the terminus of double-stack trains, as part of the Pacific Rim land bridge across the continental United States. Numerous short-line railroads are overlaid on this system, providing distribution services to local

industries off the main line. The confluence of all these systems benefits our economy and preserves local companies and jobs.

The state's ports are strategically located within a large consumer and production area. The Port Newark/Elizabeth Marine Terminal complex has been an incubator of shipping innovations through the development of containerized shipping. The privately operated Global Marine Terminal in Jersey City also handles containerized cargo. Other New Jersey facilities include petrochemical facilities in Union and Middlesex counties and along the Delaware River; the automobile import terminal in Jersey City; and the bulk cargo terminals in Camden, Salem and Bridgeton. Each serves strategic niche functions. With convenient links to rail and highway, the ports are within a day's truck trip of Chicago and Montreal. The full unification of the ports of Philadelphia and the South Jersey Port Corporation is a significant strength.

Weaknesses

While strong in many ways, New Jersey's transportation system has weaknesses too. These weaknesses must be overcome with appropriate policies and actions.

Old Infrastructure

New Jersey's large transportation infrastructure has significant maintenance needs. Most of the highway facilities were built 30 or more years ago, and most of the transit system is much older. The high cost of infrastructure repair and replacement threatens to consume all available capital funding, including any portion that might otherwise be used for upgrading or expanding either the highway or transit system.

Because of age and intense use, the cost of New Jersey's highway bridge repair and maintenance is especially great compared to other states. Of the 2,500 bridges under state jurisdiction, 20 percent are functionally obsolete, and 24 percent are structurally deficient. While structurally deficient bridges are not unsafe, they are restricted in load capacity, and may be closed in the future. Of 2,400 bridges under county or municipal jurisdiction, 17 percent are functionally obsolete and 31 percent are structurally obsolete. Roadway pavements also require constant attention. An NJDOT statewide inventory shows that 30 percent of the lane miles of pavement within state jurisdiction are rated "fair" or worse, requiring remedial work. The rate of pavement deterioration on such a massive system far exceeds NJDOT's resources. Also, many narrow highways and bridges contain no space for walking or bicycling in a safe manner.

Improvements to transit must continue to make the system reliable and attractive to existing and potential customers. The rail system requires maintenance and upgrade of station buildings, platforms, track beds, signals and nearly 700 bridges. The useful life of a bus is 12 years, and of a rail car 30 years; overage bus and rail vehicles must be replaced. The cost of repairs to bus facilities, including bus terminals, shelters, and signs, adds further to the maintenance needs. Many of the maintenance facilities are aged, and should be replaced.

Pervasive Road Congestion

The widespread mobility that New Jersey's highways provide has led to their increasing use. Traffic congestion today is a pervasive and growing problem. As travel volumes have increased, congestion on major routes has worsened and extends over longer periods of the day. In some areas, "rush hour" traffic jams can last for three or more hours. The problem of rush hour congestion is compounded by low vehicle occupancy. Average automobile occupancy for work trips, as reported in the 1990 Census for the state, is only 1.09 persons per vehicle, down from 1.16 in 1980. These figures indicate an overwhelming dominance of single-occupant vehicles for commuting. Significant congestion also occurs at other times, particularly near major shopping centers on weekends. The cost of traffic congestion is a serious economic concern. It includes millions of lost hours of productive work time for employers, expensive delays in the deliveries of goods and services, and degradation of the quality of life and environment in the state.

As noted earlier, 30 percent of interstate and state highway miles operate at severely congested levels. Problem areas are often the result of a constriction in roadway capacity -- from a reduction in the number of lanes, an intersection, or even the abrupt end of the road itself. Half of all road delays are estimated to be the result of incidents -- vehicle breakdowns, construction, police activities, and accidents. Serious incidents, such as those caused by the all too frequent "overturned tractor trailer," can cause horrendous delays.

There are limited options for dealing with this congestion. Our preference for the auto is very strong, but at the same time, building new roads or expanding roadway capacity is very expensive and is often opposed. Air quality concerns further limit the construction of new road capacity. As a single solution, added capacity may not provide permanent congestion relief if land use policies encourage sprawl development; added highway capacity may generate even more traffic. We must mount a multi-faceted approach to relieving the congestion that wastes our valuable time, stresses our psyche, and drains our economy.

Limitations of the Transit Network

While it is very extensive, the state's bus and rail system is not widespread enough to directly serve all trips made in the state. Only 10 percent of work trips in New Jersey are made by transit, and even fewer are non-work trips. The main function of the rail network has been to carry large numbers of people along radial lines to the major central business districts, including New York and Philadelphia. Connections among lines are usually poor or non-existent. Since they were originally built to compete with one another, it is largely impossible to travel in non-radial directions. Many potential riders live beyond walking distance, and even sometimes beyond reasonable driving distance from the rail lines.

The bus network is more flexible than rail service, and buses can respond to new markets. But buses are prone to slow speeds when they must stop frequently to pick up and discharge passengers, and can be unreliable because of congested roadways. Opportunities for exclusive or preferential treatment to create express routes are limited by available capacity on existing roads, and by the relatively small bus volumes in most corridors.

Access to bus and rail lines is possible, for the most part, by four means: by foot, by auto, by bike, and by feeder transit services. Each has its limitations. Walking and biking depend on barrier-free routes. Restrictions to bringing bicycles on the transit vehicles and inadequate storage at stations also limits access. Low-density residential zoning near stations limits the potential number of riders living close enough to walk. Auto access depends on available, adequate parking near transit stops; added parking facilities are often resisted by local communities. Finally, feeder services are expensive to provide, and for most people, an additional inconvenience to using transit. Finding the right mix of access to make transit attractive is difficult.

The transit system suffers from a perception on the part of the public that it is unsafe -- particularly in off-peak periods -- despite the fact that, by any measure, deaths and injuries from motor vehicle accidents are much higher. Why the difference in perception? Drivers believe that they can control, at least to some degree, the risks they face. But staying safe while using transit is perceived to be staying safe from persons at transit stations or in parking lots, rather than from dangers associated with vehicle accidents. Lack of simple amenities such as adequate lighting, directional signs, and well-kept restrooms can heighten that perception.

The many limitations of the transit system dampen ridership, particularly in off-peak periods and on weekends. Because of limited revenue potential, transit operators are reluctant to provide service in these periods, which further limits the transit system's usefulness.

Shortcomings of Freight Network

Although New Jersey's freight network is generally strong, freight movement in the state faces problems with road, rail, and port facilities, and intermodal access. Perhaps most importantly, the institutional mechanisms to solve these problems are not in place. The rail freight system is incomplete, and does not connect across the Hudson to the huge New York market, necessitating transfers to truck. Competitive rail service is limited by the presence of only one Class I railroad at most locations. The rail system also requires upgrading if it is to take advantage of new technologies.

Road congestion is expensive to truckers because of extra vehicle and labor costs. The negative effects of highway congestion are heightened by "just-in-time" delivery, whereby goods arrive at a factory or retailer just as they are needed, allowing inventories and warehousing costs to be kept low. An unreliable highway network can ruin such a system.

Waterborne freight is threatened by inadequate channel depths in the New York harbor, and at Philadelphia and South Jersey ports. This creates serious constraints on containership and other vessel traffic. Waterborne freight is further limited by insufficient dock facilities necessary to handle double-stack trains in marine terminals.

Intermodal goods movements benefit from combining the efficiencies offered by different modes for a single shipment, and have increased dramatically in the past decades. This increase is hampered by serious intermodal connectivity problems in the state. Intermodal freight facilities largely depend on a good quality highway network. In many areas, roads are in substandard condition, and cannot accommodate the intense truck traffic between intermodal facilities and major highways, such as the New Jersey Turnpike. Connections which do not involve the highway network also have problems. "Double-stack" clearances for rail lines are especially critical, since trains can efficiently move containers in that configuration. Rail-to-port access is hampered by a lack of competitive on-dock services, and many port areas have clearance and grade crossing problems.

Many institutional problems face the freight industry. The freight industry has long had to address its problems without coordinated institutional mechanisms in the public sector. This manifests itself in many ways, including: 1) the absence of coordinated freight planning and the absence of an understanding in the freight industry about the public sector's role; 2) conflicting federal, state and local environmental and site development regulations that often impede intermodal operations; 3) severely limited data about freight markets and freight needs; 4) a lack of public understanding of the economic importance of freight; and 5) political inaction to solve these problems.

CHAPTER 4 - CHALLENGES AND OPPORTUNITIES

Making decisions about changes to the transportation system is very difficult today. We must contend with more needs than there are resources. We must choose among many worthy projects, services, and programs. The choices we are forced to make take many forms. They can be geographic, pitting one part of the state against another -- south versus north, or urban versus rural versus suburban -- or a strictly New Jersey project versus one benefitting a larger region. The choices can be between highway and transit, between passenger facilities or freight, or between emphasizing maintenance of current facilities versus upgrading or expansion. And the choice may even force us to decide between abandoning existing facilities or fixing them. Finally, the choice may be between making do with what we have and can afford with current funding, or expanding transportation funding to meet some desirable but more expensive level of service.

We must also contend with the basic flaw which exists between transportation and land use planning. Currently, they are separate processes, conducted by separate entities. As a consequence, decisions about how and where to build are not necessarily made with an understanding of the impact those decisions have on the transportation system's performance. Conversely, transportation decisions are not always made with an understanding of their impact on the land. Should decisions made by the transportation sector be influenced by their potential impact on land use? On centers or sprawl? On economic growth or stability? Should communities design or redesign themselves to support a more efficient transportation system? These decisions can work together, but more often they are in conflict because they are not in the hands of the same people. Typically the state, regional organizations (MPOs), or county governments make transportation decisions, and local governments make land use decisions. Yet these decisions affect each other, and therefore where and how we live and work, and how our communities look and feel.

We must be ready for the changes that technology can bring. Technology can make travel more convenient, make our transportation system more reliable, help clean the air, or even reduce the need to travel. But can we afford the costs of those changes, and when it is necessary, can we change our behavior and our institutions to accommodate them?

The biggest challenge we face is reaching consensus on how to resolve critical conflicts so that we may move forward. Decision-makers must contend with points of view which are often diametrically opposed and strongly held. Some believe that we might have to compromise the quality of our environment to sustain economic growth. They believe that some environmental standards are an unnecessary regulatory burden on business and should be relaxed. Others contend that maintaining or improving the environment

must come first; they wish to hold fast to hard-won environmental standards or even strengthen them. And still others contend that the economy can be improved while we protect the environment.

Some oppose a project that directly affects them in a negative way, even if it is beneficial to the larger community or region. Some are wary of raising today's taxes to support tomorrow's transportation system, while others contend that we must invest now for future generations. Some say we should actively seek to make bold changes in transportation systems and land uses that can positively alter the path we are on, while others contend that we cannot make a significant impact on long-term trends, and only small incremental changes are possible.

Can we totally resolve these opposing viewpoints in this plan? Certainly not, but we can begin. Through our participation process we have brought opposing points of view out in the open. We have heard each other and we have found that we have more in common than we thought. We must continue to seek and expand upon the common ground so that the will and courage of elected decision-makers will find public support.

Challenges

In this section, we present some of the specific challenges facing us -- the changing demographic character of our population, the design of our communities, the limitations on mobility for all our citizens, the poor quality of our air, the difficult decisions we must make, and the limited funding available for transportation. In the section following, we present the opportunities.

Changing Demographics

The most fundamental change in the state in the last generation has been a shift in population, jobs, and commercial activities from more heavily settled counties and urban areas to previously lightly settled areas. Of the 1.7 million people added to the state between 1960 and 1990, over half are in four of the state's 21 counties -- Middlesex, Monmouth, Somerset and Ocean. Almost 400,000 more persons were added in the three counties east of Philadelphia -- Burlington, Camden and Gloucester. Hunterdon, Sussex, Warren and Cape May each increased at high rates as well, but on a smaller base. Accompanying these shifts, the population of large cities such as Newark and Jersey City has declined, while many municipalities in

fast-growing counties experienced phenomenal growth. The result of these trends has been a doubling of the number of people in the state who live in communities with under 5,000 people per square mile, and a significant drop in the number living at higher densities (Exhibits 9 and 10).

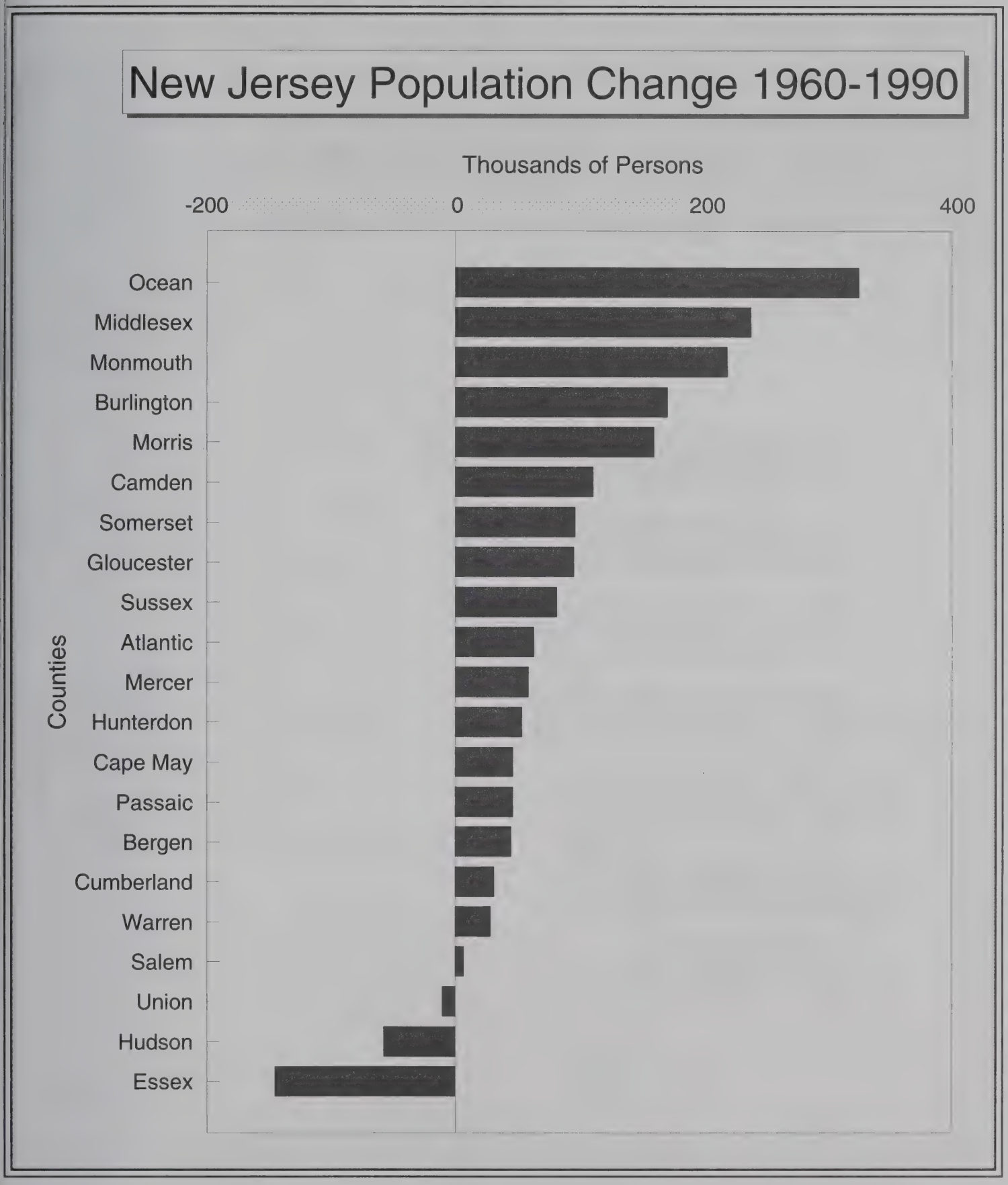
The growth in jobs has followed a similar pattern, with some notable differences. Middlesex, Monmouth, and Morris counties have accounted for over half the job growth. The number of jobs in Bergen County has grown rapidly too, despite its modest population increase. Jobs grew substantially in the Delaware Valley region -- Burlington, Camden, Gloucester and Mercer counties, and in Atlantic County as well. Much of the state's job growth has located in highway-oriented office parks. Retailers have followed their customers to the suburbs, too. Retail sales have grown dramatically in suburban locations, particularly where malls were added, while sales in urban locations grew much more slowly. The four cities of Newark, Jersey City, Paterson, and Trenton took in about 20 percent of New Jersey's retail sales in 1960. By 1990 that figure had plummeted to four percent. Camden's commercial role in its region also shrank. These changes are reflective of the major shifts which have occurred in employment sectors (Exhibit 11).

Lifestyle changes in the past thirty-five years have changed the way we travel. The proportion of women in the workforce has grown, from 37 percent in 1960 to 59 percent in 1990. This trend partly explains the rapid growth in work trips, mostly in the peak commuting period. Women often experience the burden of multi-stop trips in the suburbs, which tends to be incompatible with ridesharing or transit use. Dual-income families also tend to have at least one lengthy work trip, since it is more difficult to chose nearby home and work locations for two persons than it is for one. More flexible working hours and arrangements, and concerns for a secure transit system and parking facilities, are other issues that have emerged with women's increased participation in the workforce.

There is a rapid increase in the number of people over the age of 65 who will need special transportation services as they become too old to drive. Providing additional mobility for them will be an increasingly important challenge.

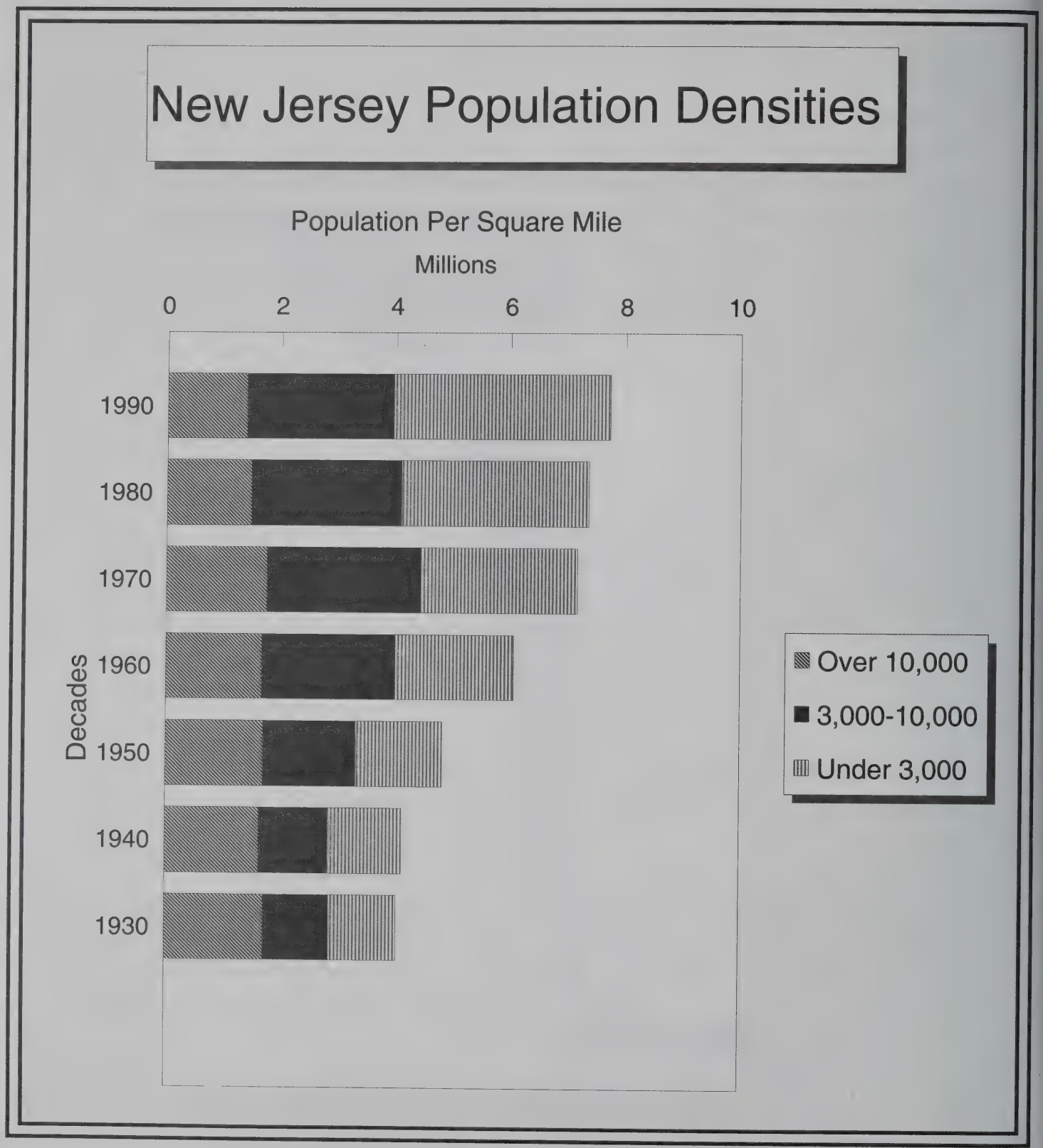
The shift in activities from the more dense urban portions of the state to lower-density suburban areas, and changes in work and lifestyles, have had two other major effects. Much of the market for traditional fixed-route transit services has been depleted, and the amount of driving done in the state has dramatically increased. The result is increased road congestion.

EXHIBIT 9



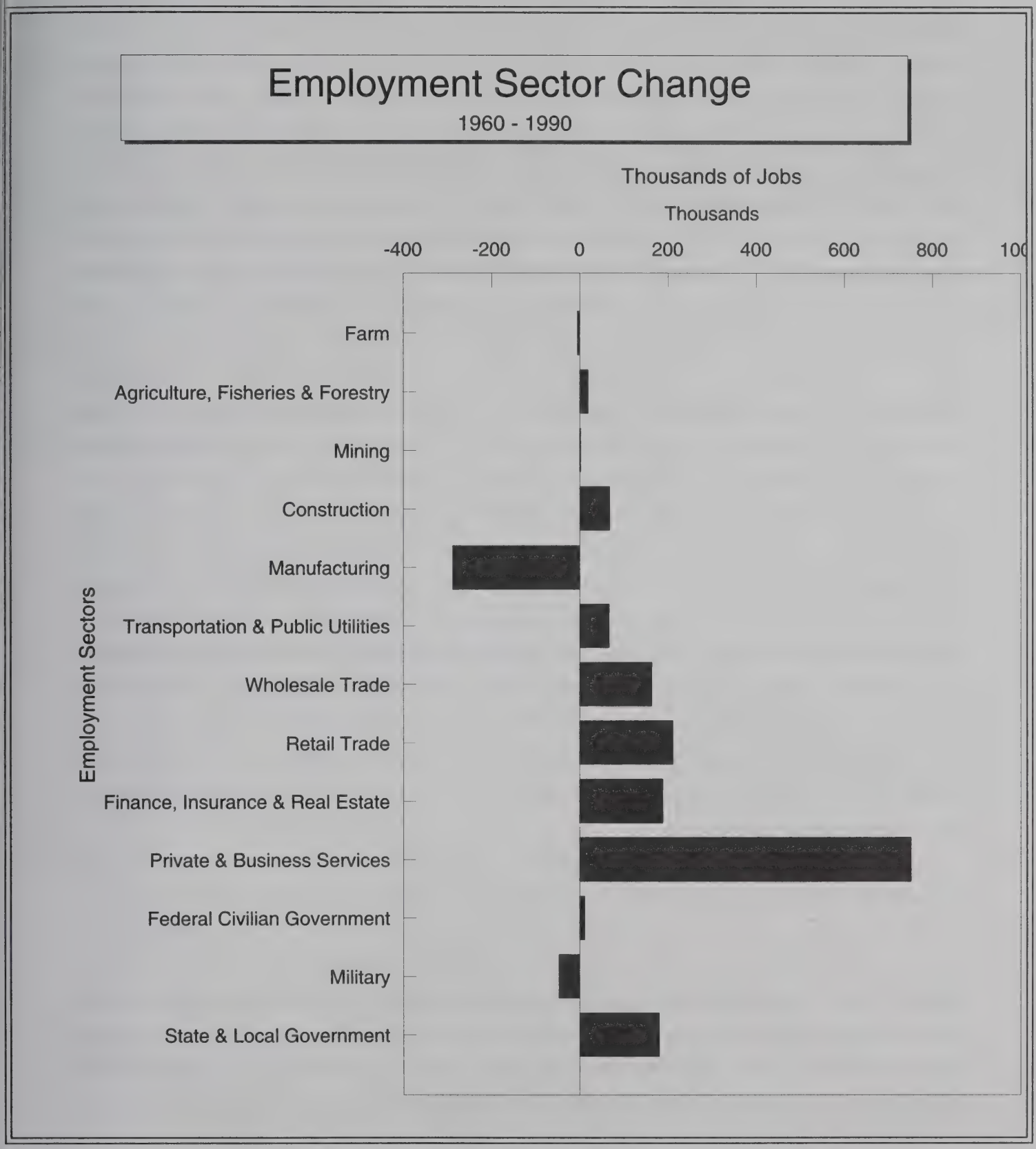
Source: US Census Bureau, 1990

EXHIBIT 10



Source: US Census

EXHIBIT 11



Source: 1990 Census

Community Design and Land Use

The patterns, intensity and design of new development in New Jersey has dictated that the single-occupant vehicle is the primary, if not the only form of transportation for most travelers. Sidewalks and bikeways are often discontinuous or absent. Curvilinear street patterns in many residential neighborhoods without connecting paths to adjacent areas lengthen walking distances, making travel on foot unattractive. Office parks often have no sidewalks, and their setbacks from main roads leave possible transit users far from building entrances. Even if transit is available, parking is still provided at ratios that ensure a free space for all who use the building, creating a built-in incentive to drive. Building height restrictions and setback requirements create low densities, and large expanses of landscaping and parking stretch the length of any possible walk, bike trip or bus route. Commercial strip development, linear and uncontrolled development along highways, has expanded the number of shopping trips by automobile, and has created safety and congestion problems because of frequent on-and-off movements to and from the highway.

These problems reflect long-ingrained planning and zoning practices that promulgate low-density environments in the interest of a more suburban appearance. These practices are often driven by fiscal considerations -- to attract "clean" ratables and to minimize the increase in the school age population and property taxes. Roads often create barriers to pedestrians and bicyclists. Future partnerships will be needed to create more compatible environments. Linkages between adjoining neighborhoods are needed to encourage these modes.

The State Development and Redevelopment Plan addresses these issues. It calls for concentrating growth in centers where infrastructure has the capacity to support development, and with land use densities, patterns and mixes that lessen dependence on automobiles and allow other options. These land use changes can take many forms. The challenge will be to promote the advantages and to design incentives for communities to take into account regional perspectives, while at the same time respecting the strong public concern with "home rule."

Transportation Equity

More than 1.1 million New Jersey residents have a limited ability to meet their mobility needs. One out of eight households in the state does not have a vehicle available for its use. Nearly 230,000 persons, or three percent of the state's residents, have mobility limitations which make alternatives to driving essential. Another 480,000 non-disabled persons in New Jersey are over 75 years old, an age when driving reflexes and endurance may be declining, and alternatives to driving become more necessary. And 420,000 are

12-16 years of age and dependent on adults for transportation, if other alternatives are not available. The Americans with Disabilities Act (ADA) requires transit systems to provide facilities for the disabled and paratransit services equivalent to existing services.

The job base shift to the suburbs has made it more difficult for many urban residents to reach jobs. NJDOT and NJ TRANSIT recently examined suburban job access for urban residents, concentrating on seven cities in the state: Atlantic City, Camden, Elizabeth, Jersey City, New Brunswick, Newark, and Paterson. They found that, along with a lack of job skills, urban residents find the lack of access to transportation a barrier to suburban jobs. The study also found, however, that providing this access is not easy. Providing transit services in the "reverse" peak direction can be difficult because service is geared to carrying the major flow of traffic. This is particularly true for rail service. Where it can be provided, the cost of operating the service may far exceed the revenue collected. Even when riders are able to reach suburban locations, means to reach the job site are often absent. Employment locations are often distant from the train or bus stop. We must find ways to provide access to those citizens who are without an automobile and have no other mode available. At the same time, we must address the issue of the high costs that are often incurred for such specialized services or facilities.

Clean Air

Air pollution is caused both by stationary sources like power plants and by mobile sources -- automobiles, trucks, buses, trains, aircraft, and ferries. Approximately 85 percent of carbon monoxide and 40 to 50 percent of ozone pollution in the United States is created by these mobile sources. New Jersey must take significant steps to meet the standards for ozone and carbon monoxide, two of the six "priority pollutants" that the federal government regulates under the Clean Air Act Amendments (CAAA) of 1990. These steps will include efforts to promote the use of cleaner vehicles and to reduce the number of auto trips made by New Jersey residents.

To make vehicle emissions cleaner, New Jersey is mandated to use oxygenated fuel, and to adopt a more comprehensive vehicle inspection program. Auto manufacturers are required to introduce vehicles with lower emissions.

A key provision of the CAAA specifically aims to reduce auto trips. The Employee Trip Reduction Program requires employers with work sites with 100 or more employees who arrive at work between 6:30 A.M. and 9:30 A.M. to devise plans to increase the ratio of workers to vehicles arriving at the work site by at least 25 percent above the average in their area. Evidence gathered elsewhere suggests that reaching such an

objective will be very difficult. In typical suburban locations where transit is unavailable, ridesharing will need to increase by threefold. Finding economically benign measures that still provide enough incentive to change behavior will be difficult.

The Decision-Making Process

The process of making improvements to New Jersey's transportation system is hampered by the multiplicity of agencies and authorities responsible for planning, building, operating, managing, and maintaining the system. Over 50 such organizations operate entirely within the state. Another handful cross state borders, and still others outside New Jersey directly affect its transportation system. Counties and municipalities have jurisdiction over 70 percent of the state's road network, and land use decisions made at the local level greatly influence how well the overall transportation network functions.

The influence of localities and even neighborhoods cannot be overestimated. Early and frequent involvement by communities that are directly affected by potential system upgrades is important, and often results in a better project. Local opposition, however, can delay and eventually stop projects designed to improve mobility beyond the locality, thus depriving the greater region of the needed benefits.

Layers of government review are often long and complicated, further slowing progress. New Jersey must simultaneously make the decision-making process more efficient and more open to a wide variety of stakeholders, despite the seeming conflict between these two objectives. Coordinated decision-making must go beyond the current array of transportation agencies and extend to other state agencies county and local governments, and the private sector. In addition, the public and its elected officials must be better informed about transportation needs, costs, benefits and impacts. Public and private transportation providers must creatively make this information widely known and understood.

Adequate Funding

Operating, maintaining and improving the state's transportation system requires greater funding than is being provided today. The existing system needs constant reinvestment to maintain its current level of service. Investment in new facilities and services is needed to correct the transportation system's shortcomings and to meet the new challenges we face. While New Jersey already spends a great deal, it is still not enough to meet these needs.

As needs and challenges become greater, more constraints have been placed on NJDOT's ability to respond, let alone take on new, proactive roles. In the past four years, while the number of state highway lane miles grew through widenings and extensions, NJDOT staffing shrank by 12 percent. More sophisticated operation of highways -- high-occupancy vehicle lanes, traffic surveillance and management -- will mean even greater operating staff needs. NJDOT's operating budget was reduced by almost 20 percent in the past four years, accounting for inflation. Federal aid for transit operations has not increased, and is constantly under threat in Congress.

Capital funds for transportation facilities face budget problems as well. Construction is more costly than in past decades, largely because of inflation, intensely developed land, and environmental regulations. Maintaining traffic during construction on busy highways and transit lines adds to the cost. Prospects for significantly increasing federal and state capital funding are not promising. Federal aid for highways is matched in large part by the New Jersey Transportation Trust Fund (TTF). The TTF is scheduled to expire on June 30, 1995, and must be replaced with a stable, adequate source of funding.

The extent to which transportation facilities and services are directly financed by user fees is an important continuing issue in New Jersey. A larger proportion of the total vehicle miles of travel using limited access highways occurs on toll highway facilities in New Jersey than in any other state. NJ TRANSIT'S operating ratio (i.e., the proportion of NJ TRANSIT'S operating cost which is recovered from users through fees for the services rendered) is in the range of 50 percent. This is among the higher operating ratios of any of the transit agencies in the country. In the context of NJDOT's and NJ TRANSIT'S continuing requirement for funding to operate the existing transportation systems, to maintain the existing systems in a state of good repair, and to provide certain new facilities and services -- and in the context of the significant political sentiment for reducing government budgets and taxes at the federal, state, and local levels -- identifying the appropriate mix of funding for transportation programs is a significant challenge. One element of this challenge is the extent to which user fees should be relied upon relative to general transportation related sources (e.g., the gas tax) and general fund sources.

Opportunities

To meet these challenges and overcome its weaknesses, New Jersey's transportation system must build on its current strengths, and it must create and exploit new opportunities to provide the services that will be needed.

New Technology

New technology is expected to help ease the impacts of congestion caused by both recurring traffic volume and incidents on the road network. Known collectively as intelligent transportation systems (ITS), these new technologies are designed to enable emergency vehicles to respond more quickly, and to warn drivers of trouble-spots in enough time to change their routings or even shift modes. Beyond that, more sophisticated vehicle technology will add to road capacity by making it more efficient. As a result, expensive and disruptive new alignments and road widenings will be less necessary.

The use of technology to more efficiently collect tolls maximizes the revenue stream from toll roads, reduces the frustration of queuing at toll barriers, and points the way toward pricing the transportation system according to the size of the market and available capacity. Electronic toll technology, now being introduced in some parts of the greater New Jersey/New York/Pennsylvania area, provides the opportunity to achieve these ends through market-based principles.

Fast-developing telecommunications tools are making it more attractive for workers to accomplish their tasks at home, or at nearby satellite centers. With the advent of telecommuting, peak period congestion on our road network can be stabilized, or perhaps even reduced. Some estimates suggest that up to 40 percent of all workers can telecommute at least some of the time. While an employer may fear being unable to supervise an employee at home, evidence to date suggests that employees are more productive when telecommuting. The opportunities will continue to expand as computer literacy grows, computer networks expand, new telecommunication tools are introduced, and knowledge of the quality of life advantages becomes more widespread.

New Transit Programs

Innovative programs such as NJ TRANSIT's WHEELS, a series of experimental new or expanded services mostly geared to fill service gaps in the suburbs, present a new way of doing business. By testing new markets proactively, rather than providing service only where markets are already proven, opportunities to expand the transit network are created. These experimental services extend the span of service into the late evening, add weekend service, extend bus lines, increase the frequencies on existing routes, and connect rail stations through employer-supported shuttles. They can provide mobility for those New Jerseyans without cars, enabling them to reach jobs and other activities now inaccessible except by car.

Traditional urban centers and high-growth suburbs, especially where traffic congestion slows bus service, may provide opportunities for new fixed-guideway rail services, if they can be justified on the basis of ridership and costs. Extension of the existing Newark City Subway, the two light rail lines being planned (the Newark/Elizabeth Rail Line, and the Hudson River Waterfront Light Rail Line), and the Burlington/Gloucester extension of PATCO (also under study) could begin to create a suburban rail network in the state's more dense areas. Making those choices must be preceded by careful analysis and close collaboration with local communities in the area of each potential new service.

Market-Based Pricing of Transportation Services

The limits to transportation system expansion and funding requirements suggest the economic concept of pricing transportation services consistent with their market value. That value might be associated with the distance traveled, the time of day traveled, the cost of supplying the transportation resource, or the quality of the service offered. Pricing can be tailored to meet other objectives such as environmental benefits, creating options for those who do not drive, or capturing the largest market share.

Information-based technologies can maximize highway and transit system revenues. With more precise knowledge about who uses the system, at what time and for what purpose, resources can be allocated to make the transportation system more cost effective.

Global Marketplace Positioning

We are in an enviable position to take advantage of the shift toward international trade. The high quality of Newark International Airport, the facilities at Port Newark/Elizabeth, their transportation links to the huge markets in the northeastern United States, and to the world's largest financial center in New York, all add to our advantage. To make the most of these opportunities, we need to protect these investments by making certain they remain competitive as passenger and freight gateways. A new Class I railroad in the face of a possible merger of Conrail and Norfolk Southern is one such opportunity. A new rail freight link across the Hudson or the New York City harbor is another such initiative that may be an opportunity to reduce unnecessary truck movements, and the high road infrastructure costs they impose.

New technologies in the world services/information industry (fiber optics, satellite communication) are fully effective only where people and goods movement systems are in place. Progress on both fronts is necessary to capture New Jersey's share of this growth, to exploit past investments, and to be a leader in these economic sectors.

Partnerships

As the role of government undergoes a fundamental rethinking, we need to form new partnerships to better provide transportation facilities and services. Opportunities abound to create such partnerships among public entities within and beyond the transportation sector, and among public and private entities:

- NJDOT must work closely with sister agencies in New Jersey and other states. For example, an electronic toll collection program is being set up by a number of independent transportation agencies, and joint transportation operation, information and payment centers can also be established. TRANSCOM -- a consortium of highway and transit agencies in the metropolitan New York region, has already established this principle for incident management information and coordination.

- NJDOT must build on existing relationships with state agencies whose programs relate to transportation. For example, the Department of Environmental Protection, for implementing the CAAA; the Office of State Planning, for policies consistent with the SDRP; the Office of Tourism, for the transportation needs of cultural attractions; the Department of Motor Vehicles (DMV), for vehicle emissions testing; and the Economic Development Authority, for intermodal development districts.

- NJ TRANSIT must build a partnership with localities to maintain and improve station areas, including sidewalks and other facilities compatible with transit station area developments, and to effect other land use changes in conjunction with transportation improvements or local aid.

- NJDOT must work with businesses on incentives for home telecommuting, on coordinated investments in rail freight, on telecommunications (fiber optics on rail and highway networks), and on less burdensome administration of regulatory measures, such as those concerning truck weights and employer trip reduction programs. Once a decision is made to construct a project, completion can be speeded by providing profit incentives to the private sector.

- NJDOT and counties must work with local municipalities and private property owners to remove barriers to bicycle and pedestrian mobility created by streets, highways, and bridges and to add linkages to enhance mobility options.

- NJDOT, NJ TRANSIT, New Jersey MPOs and TMAs, counties and municipalities, and the business community must work in a collaborative manner to address the complex interrelated regional transportation problems.

- Finally, NJDOT and NJ TRANSIT must seize the opportunity to form a partnership with transportation consumers to uncover and address the small, but real, annoyances they face daily in trying to negotiate the transportation network.

CHAPTER 5 - PUBLIC INVOLVEMENT IN THE PLAN

Although developed under the leadership of NJDOT, this is not the Department's plan. To be truly effective in meeting the transportation needs of New Jersey citizens, it must be the "customers" plan. The public involvement program was designed to be a central aspect of the **Transportation Choices 2020** process. The objectives of the public involvement program were twofold: to gather information from the public to help formulate the plan, and to build a broad base of public consensus and support for implementing the plan. The process is a dramatic change from the way outreach traditionally has been conducted. The public has been included in the process from the beginning, not after the plan has been developed. The results of the process are seen in every aspect of the final plan. The public involvement program has been fully responsive to the federal planning requirements of ISTEA, providing a broad range of participation opportunities for all segments of New Jersey's public.

This program is an important means of developing an understanding between the state's private and public transportation providers and their customers. The resulting planning process included the public at each step, and created a plan whose elements are rooted in the goals and needs of New Jersey's citizens.

PUBLIC INVOLVEMENT GOALS

The public involvement program was designed and implemented to meet the following goals:

- Promote early, active public involvement, including the widest possible range of New Jersey citizens to develop a plan that captures their vision, goals and values for the future.

- Involve New Jersey public and private leaders with a broad range of responsibility and expertise, so that the plan will respond to the full extent of transportation-related issues with the appropriate actions, choices, and changes required to achieve it.

- Identify critical problems, issues and needs of New Jersey's transportation customers, providing a foundation to develop the plan.

- Afford ample opportunities to raise a broad range of concerns, conflicts, and tensions related to transportation, and attempt to resolve these differences.

- Build public consensus and support for implementing the plan, including changes in policies, programs, finance, and other areas related to transportation that are required.

The first step in developing the public involvement program was to identify the stakeholders and the most effective way to reach them. Stakeholders were defined as those individuals and organizations that provide, use and are affected by transportation, and will be a part of implementing the plan. They included users of the transportation system's highways, walkways and bikeways, railroads, public transit, airports and seaports. The stakeholders also included business and industry; institutions; other transportation providers; state, county, and local public officials; business and environmental interest groups; and civic and labor interests. Employees of NJ TRANSIT and NJDOT were also identified as important stakeholders.

The Public Involvement Program

The public involvement program included an array of activities designed to reach various stakeholders. The information needs of the planning process and the needs of the public were considered in selecting each activity. This included determining what kinds of information would be needed from each segment of the public to prepare the plan and what kinds of information each segment of the public would need to understand the elements of the plan.

The elements of the program emphasize information exchange, education, and a two-way discussion between NJDOT and the public. Discussion with the public centered on transportation problems facing the state, future visions for the state, goals and objectives, the relative trade-offs among different transportation strategies, and transportation actions that might be included in the plan. Innovative techniques were used to provide many opportunities for public involvement, allowing for active, dynamic, informed communication.

The public involvement program was a comprehensive effort to involve the public in the broadest sense in the planning process. This kind of public involvement is important to the process for at least four reasons. First, the 1991 ISTEA legislation specifies that states must involve the customers, the public, and those having a stake in the outcome as major participants in developing their transportation plans. Second, there are many ideas, solutions, new technologies and other innovative approaches the informed public is in a position to contribute, if asked. Third, by being participants in this way, there is a tremendous opportunity for those who might otherwise be negative about the process and the results to "own" the whole process and the results. And finally, active, interested participation by various stakeholders generally results in not only a better plan, but a plan with a higher degree of credibility and a greater likelihood of successful implementation. With this in mind, public involvement activities were keyed to the technical work so that

these results were available when they were needed (Exhibit 13). The public involvement results provided a guide for evaluating and selecting strategies and actions. Along with the technical analysis, they also provided a practical picture of what can be done, when and by whom.

Exhibit 12 shows each element of the public involvement program and the segments of the public it was primarily designed to serve. A description of each activity follows.

EXHIBIT 12:
PUBLIC INVOLVEMENT MATRIX

	Elected Officials	Planning & Agency Officials	Interest Groups	NJDOT and NJ TRANSIT Employees	General Public
Newsletters	X	X	X	X	X
Bulletins	X	X	X	X	X
Focus Groups					X
Survey					X
Regional Forums					X
Issue Groups		X	X		
Inreach				X	
Symposium	X	X	X	X	
Future Worlds Workshops		X	X		
Public Forums	X	X	X	X	X

Newsletters

Newsletters are used to reach the broadest audience. Two newsletters were written and distributed in October 1993 and October 1994, each at an important point in the plan's development. They discussed the impetus for **Transportation Choices 2020**, presented an initial set of goals, discussed various public involvement activities and offered a means for the reader to receive additional information about the plan. Newsletters were sent to individuals and organizations on a 5,000+ mailing list, to NJDOT and NJ TRANSIT's employees, and distributed at other public involvement activities.

EXHIBIT 13

COORDINATION BETWEEN PUBLIC INVOLVEMENT AND OTHER PLAN ELEMENTS

PUBLIC INVOLVEMENT ACTIVITY	PLAN ELEMENTS
FUTURE WORLDS WORKSHOPS ISSUE GROUPS EMPLOYEE INREACH	FUTURE WORLDS VISION FOR NEW JERSEY
ISSUE GROUPS EMPLOYEE INREACH	GOALS & OBJECTIVES
FOCUS GROUPS ISSUE GROUPS EMPLOYEE INREACH REGIONAL FORUMS	PROBLEMS/CAUSES
FOCUS GROUPS ISSUE GROUPS EMPLOYEE INREACH REGIONAL FORUMS	STRATEGIES CANDIDATE ACTIONS SELECTED ACTIONS
ISSUE GROUPS EMPLOYEE INREACH	EVALUATION CRITERIA REPORT CARD

Bulletins

A technical bulletin was distributed with each of the two newsletters. The bulletins presented information related to the topics in the newsletter, but in more detail. The topics covered were the key trade-offs that need to be addressed as the plan is developed and the elements of the public involvement program. The second bulletin also served as the public notice requesting comments on the shape and extent of the overall public involvement effort.

Focus Groups

Two rounds of three focus group meetings, each with citizens and users of the state's transportation system, were held in the state's three geographic areas. The purpose of the focus groups was to discuss in detail with the system's day-to-day users their transportation-related issues and the needs facing the state. Each group contained a randomly selected cross-section of users from the area, including transit and auto users. The first round was held in May 1994 to discuss people's perceptions of the problems they encounter traveling, and the types of measures they would use to evaluate the system. The second set of meetings was held in October 1994 to discuss potential strategies for addressing the state's transportation problems.

Survey

In early 1993, a telephone survey among New Jersey residents was conducted to determine their understanding of, and views on, basic transportation services, facilities and problems.

Regional Forums

Two series of regional forums were held throughout the state to discuss transportation issues with the general public. The first series in the fall of 1993 and spring of 1994 informed the public about the development of the plan, and obtained their general views about the types of transportation services they would like to see in the future. The forums were publicized in press releases to area newspapers, and were held in locations where it would be easy to attract the general public to the scheduled activities. These included retail malls in Voorhees and Pleasantville, the Rutgers Student Center in New Brunswick, and the Liberty Science Center in Jersey City.

Each of these forums used a variety of tools designed to attract the public and discuss their views:

- An information table containing newsletters, bulletins and other printed materials about New Jersey's transportation programs;
- A videotape explaining the importance of the plan and how the public can stay involved;
- Comment cards for people to record their opinions and to add their names to the mailing list;
- A separate room for short, 15-minute focus groups;
- A kid's table for children to draw their transportation "fantasies" while their parents took part in other activities; and
- A video camera for interviews.

The second round of forums was designed to contact specific travel markets at locations throughout the state. Participants were asked to complete comment cards with specific issue-related questions. Ten forums were held in September/October 1994, with groups such as corporate employees, senior citizens, suburban commuters, urban residents, interstate commuters, and truck drivers. Approximately 1,000 people submitted comment cards at these forums. Locations included: the Hoboken Transit Festival, a supermarket and office building in Newark, a shopping center in Princeton, senior citizen centers in Montclair and Point Pleasant, an office building in Mansfield Square, a truck stop in Bordentown, the PATCO station at Lindenwold, and the Port Authority Bus Terminal in New York City.

Issue Groups

More than 200 transportation specialists, planning advocates, and various public, private and non-profit sector representatives were invited to participate in the plan's development as a member of one of four issue groups: Urban/Suburban Mobility, Economic Development, Land Use/Community Design/Quality of Life/Environment/Health, and Goods Movement. The issue groups had three important purposes: 1) to bring together individuals and organizations involved in each of the issue areas to discuss the current state of transportation in New Jersey; 2) to debate the relative merits of the vision, goals and objectives; and 3) to discuss what strategies and actions the state should pursue in the plan.

Group membership required a significant commitment of time to attend several meetings and to review advance materials before each meeting. The group members' interest and involvement remained strong throughout. The issue groups met five times during the planning process: July, September and October 1994, and January/February and March 1995.

In July and September 1994, the four groups met in the issue areas described above. On the other three occasions, the four topical issue groups were combined and reconvened by geographic areas -- while maintaining a representation from all four original issue group topics. For these meetings, the North Issues Group met in Newark, the Central Group met in Trenton and the South Group met in Cherry Hill.

In the first set of meetings in July 1994, issue groups discussed the plan's goals and objectives, the basic transportation problems facing the state now and over the next 25 years, and broader concerns (such as the need for better information in decision making, ways to enhance mobility, coordinating land use and development, and the relationship between transportation and economic development).

In September 1994, the issue groups helped to finalize the project's goals and objectives, discussed the project's vision, brainstormed various actions within an initial set of strategies, and worked towards developing a consensus on which strategies to emphasize over the next 25 years.

In October 1994, the plan's vision was finalized. The groups reacted to a number of basic themes developed from the technical and public involvement efforts and gave their views on the role state government should take on various issues.

In January/February 1995, revised strategy areas were presented, along with more than 150 potential actions that fit within these strategies. A number of the more important actions were discussed in detail, from the following standpoints:

- Are these actions realistic, and can they be implemented?
- Will they have public and political backing?
- Who should be involved in implementation?

In March 1995, "showcase actions" were described and discussed -- along similar lines used at the previous issue group meetings. In addition, there was a discussion of long-term financial issues and directions.

NJDOT and NJ TRANSIT Employee Inreach

Employees of New Jersey's two statewide transportation agencies were included in the plan's development. The objective was to involve the employees in the development of the plan, to reflect their concerns and ideas and to enlist their support of its recommendations and the work necessary for its implementation. A

total of 13 employee meetings at the two agencies were held in 1994. These included informal forums and presentations and more structured meetings.

NJ TRANSIT/Eagleton Symposium

On June 9, 1994, NJ TRANSIT sponsored and The Eagleton Institute hosted and facilitated a day-long symposium to discuss the future direction of transit in the state. Participants included key stakeholders from both the public and private sectors. Results of this symposium were used in the development of the issue group agendas.

New Jersey Statewide Transportation Symposium

A statewide transportation symposium was held on December 16, 1994, at Trenton. The baseline conditions, the vision, goals and objectives for 2020, and customer perceptions were presented to a group of 150 invited guests. One of the more useful aspects of the symposium was NJDOT Commissioner Wilson's challenge to the long-range planning process to produce findings and recommendations that were relevant, realistic, able to be implemented, and capable of generating public and political support.

Future Worlds Workshops

Three Future Worlds workshops were conducted in April, May and June 1994 to help develop alternative future scenarios and the early stages of the "vision" statement. These activities are explained in detail later in this chapter.

Public Forums

Three public forums were held in Newark, New Brunswick and Cherry Hill in April, 1995 after the complete draft plan was released for public comment.

What Have We Heard From The Public?

The public involvement activities generated thousands of comments and ideas from various stakeholders, confirming the important role that the transportation system plays in the lives of New Jersey's citizens every day. The comments ranged from requests for specific improvements in local neighborhoods to more

general concerns about the need for additional transit services and changes in the state's land use and development patterns. The most commonly heard ideas and concerns are summarized below.

Reduce Congestion

In general, New Jersey's citizens are concerned about the increasing congestion and the state's ability to provide adequate mobility in the future. Individuals are concerned that they are taking more time to accomplish their daily activities, especially travel to work and some recreational trips. Truck drivers are having more and more difficulty delivering goods in the state, often traveling at off-hours to avoid delays. Economists, corporate leaders and developers are concerned about the ability to attract new businesses to areas that are becoming less accessible.

While the strategies for controlling congestion cover a broad range, there is some agreement on the types of approaches that should be pursued. There is an understanding that large highway expansion programs can no longer be the primary tool. Solutions will need to be multimodal, including improved system management for greater efficiency, better transit, more use of bicycles and walking in areas where these modes make sense, and completing missing links and selectively expanding the highway system.

Maintain the Existing System

There appears to be widespread agreement that we should give immediate attention to more aggressive system maintenance for both highways and transit. There is concern, especially among truckers, that continued deterioration of the system is contributing significantly to the increasing cost of doing business in New Jersey. Related to this, many expressed the need to schedule maintenance and reconstruction better to reduce traffic impacts. Transit station and shelter conditions need to be improved as well. Also, better maintenance of shoulders and surfaces are needed for bicyclists.

Improve Transit Service

Expanding transit service is seen as the most desirable way to reduce highway congestion. This message surfaced at all the public involvement activities, including focus groups, regional forums, issue groups and inreach at NJDOT and NJ TRANSIT. Considerable operating and high capital costs, particularly for fixed-guideway services, mean that expanding the transit system should be done carefully. Projects should build upon the extensive system already in place -- especially in northern New Jersey, where a multimodal

transit system already exists. In southern New Jersey, where the transit system is not as extensive, the need for new transit service was discussed more often.

Specific improvements that were cited include:

- Expand existing transit service to new growing employment centers in the suburbs;
- Provide "seamless" multimodal trips with better connections and coordination between existing transit modes, especially between bus and rail lines and schedules;
- Provide better access to existing rail stations with improved feeder bus lines and expanded parking;
- Provide more frequent transit service for greater convenience;
- Provide bicycle storage facilities;
- Provide more service amenities at transit stations; and
- Lower transit fares.

Improved Travel Information

There was general agreement about the need for better travel information for both transit and the highways so the existing transportation system can be used more effectively. More easily accessible information is needed for transit system services, schedules, fares, and delays, including private and public transit services. For highways, legible signs and accurate, up-to-date information about congestion and delays are essential. This view was especially held by those involved in freight transportation. Delays which are very costly for shippers and carriers are absorbed into the general cost of business and passed on to consumers by raising prices for goods and services.

Safety

Feeling safe and secure was highlighted as a very important concern, especially by the general public at the regional forums and focus groups. People are anxious about their safety when using the transportation system, whether walking, biking, driving, or using transit. For highway and transit the focus of their concern was more on personal security from crime, rather than the danger of accidents. This feeling among auto drivers is becoming more prevalent, as the number of reported carjackings has increased. Better security is needed on transit, and more call boxes and police presence on the highways.

New Jersey's Development Patterns

The public understands the relationship between existing residential and commercial development patterns and increasing reliance on automobiles for mobility. This was cited as a major problem by the general public as well as transportation professionals and special interest groups. While they recognize that higher densities, mixed-use developments, and improved community designs will encourage alternative transportation modes, they recognize the difficulty involved in trying to change existing patterns. Developers of residential and commercial real estate point toward more auto-dependent development as the choice of the marketplace. This was clearly an area of divergent opinions. We need a greater sense of consensus before advancing any strategy to link transportation, land use and development decisions.

Travel Options

People expressed a desire for travel options so they would not be completely dependent on the automobile. In addition to more transit service, they called for better carpool information, more sidewalks, bicycle lanes and paths, and safe bicycle storage at transit stations and employment sites.

Goods Movement

While the general public viewed the transportation system from the perspective of its personal travel desires, business leaders and local officials emphasized the importance of freight transportation to the economy. The same highway congestion that frustrates auto travelers is a major concern of shippers and carriers of freight. Congested roads, especially those providing access to marine, rail and air terminals, add significant cost and delay to freight movement. This congestion adversely impacts New Jersey's viability as a desirable location for economic development. Participants also cited weight and clearance restrictions on roads, clearance restrictions on railroads, and channel restrictions affecting marine terminals as factors impeding efficient goods movement.

Innovations in Accomplishing Improvements

Issue group participants, in particular, noted that there were some innovative directions that NJDOT/NJ TRANSIT should adopt to help achieve the types of improvements discussed above. These are briefly described as follows:

- *Partnering*: The state needs to form new partnerships with local governments, communities and businesses to achieve a better future. Partnerships need to be based on understanding the mutual needs of all parties, an emphasis on early, pro-active involvement of all relevant parties, and a willingness to negotiate. Some issue group participants noted, however, that partnering is fraught with risk; if deals are struck with parties who later renege or revise their agreements for various reasons, the other parties may be left "holding the bag."

- *Private Sector Involvement*: The business community, in particular, has resources, technical capabilities and a profit-based willingness to solve problems cost effectively. The state should take greater advantage of the strengths the business community can offer, but must address its concerns as well. Business is wary of regulatory mandates and bureaucratic problems. In the freight industry, among employers and among those firms on the cutting edge of technology there was a stated desire to share ideas and discuss needs.

- *Technology*: The risks of the state employing technological means to solve many transportation problems today can be significantly reduced by relying on private-sector input. One notable example, cited in the issue groups is in the area of electronic transit fare payment systems. There was strong support for "smart card" technology, which is already being used for many purposes in the private sector. Businesses are turning with increasing readiness to telecommuting, irrespective of Employer Trip Reduction plan mandates. On the other hand, the issue groups noted that the available technology does not necessarily have to foster certain policy changes -- electronic toll collection could, but need not be, related to market-pricing policies.

- *Education*: There were divergent views here. Many issue group participants noted that education at many levels can better inform land use decision-making, transportation mode choice, goods movement access, economic development, and many other related issues. They would like to see more efforts in this area. But some -- including some of the same participants -- noted that this type of education effort is not something that the state does well, and it needs to be coordinated with existing similar efforts. Even if done well, there is a wariness (and in some, outright distrust) about the state's motives in conducting such education.

The Future Worlds Process

The **Transportation Choices 2020** planning process was designed to include scenario and vision development as a means to learn to think more systematically about the kind of future we want to create

through our present choices. In this era of continual change, the best way to forecast the transportation future is to envision it, choose it, and create it. Scenario development assumes that because there will never be enough information and certainty upon which to base a decision about the future, it is more important to develop a wide range of possible decisions based on a plausible range of possible futures. Vision development provides a scenario for the most desired future, from which the means to achieve that future can be developed.

Traditional long-range transportation planning methodologies take existing relationships and project them in a straight line into the future. They have proven to be unable to deal with the pervasive uncertainties created by the kinds of changes we have witnessed over the past several generations. Transportation planning today requires new tools. In recent years, scenario and vision development have emerged as two powerful ways to improve the ability to prepare meaningful long-range plans in both corporate and government settings.

The process to develop the plan included a "Future Worlds" component, which applied these innovative tools to transportation planning. The "Future Worlds" exercise was incorporated into the planning process to:

- assure that **Transportation Choices 2020** has a long-range perspective; i.e., a perspective not limited by knowledge of past trends and current shifts;

- provide a methodology for thinking in a disciplined, systematic way about major areas of uncertainty;

- help create a compelling "Vision" for New Jersey and its transportation system; and

- foster creative strategy development and help to evaluate alternative policy actions.

The Scenario Development Process

Four scenarios for the future of New Jersey and its transportation system were developed through the Future Worlds process for **Transportation Choices 2020**. The scenarios include a "bad news" future of economic decline and worsening social problems, a continuation of the status quo, and two alternative images of desirable, successful futures. Participants in the Future Worlds workshops, a diverse group of New Jersey stakeholders from business, government, and non-profit organizations, designed four scenarios to span the full range of plausible futures, from worst plausible to best feasible. In a final workshop, Future Worlds

workshop participants discussed the two positive images of the future and reached agreement on key aspects of both scenarios that they most strongly preferred and wanted to achieve.

The Four Alternative Scenarios of New Jersey's Future

The "Future World" process produced four alternative scenarios of New Jersey's future in 2020. Nearly all the Future Worlds participants considered each of the four scenarios plausible, although the scenarios were not regarded as equally likely. Each one was judged to be internally consistent. Each alternative future envisioned a different transportation system.

- ***Bad News - The Worst Plausible Future*** presents a dismal future for New Jersey in 2020. The state's economy declines, society becomes much more polarized, citizens live in fear of crime and become more and more isolated from each other. The environment is badly degraded and increasingly threatens our health. Public funding systems are incapable of keeping the state's transportation system in a state of good repair. Traffic congestion is horrible. Participants in the Future Worlds workshops were surprised -- and alarmed -- at how plausible every element of this scenario seemed.

- ***Muddling Through - The Status Quo Continues*** projects recent trends of incremental improvements in some areas while other problems get worse. Although some aspects of New Jersey's quality of life improve in the future, this was not judged to be a terribly promising future overall. The participants who built the scenarios believed that a continuation of the status quo will not be an adequate response to the transportation challenges ahead. Some participants viewed this scenario, or elements of it, as the "most likely" future, but no one considered it their "preferred" future.

- ***Gateway to the World - A Dynamic, High-Tech Future*** presents a promising future based on the development of advanced technologies to improve telecommunication and transportation systems, which enhance the state's economic development potential in the future. The scenario develops the idea that strategic investments to exploit the strengths of New Jersey's airport, port, rail and highway systems for intermodal freight transportation can be a catalyst in boosting the state's status as a global transportation hub and "gateway to the world."

- ***Pushing the Envelope - A Sustainable Future*** presents another image of a promising future for New Jersey in 2020. Transportation choices help speed the emergence of "Communities of Place," compact, mixed-use, "centered" community forms advocated in the SDRP. Social progress occurs

in many areas, from a narrowing of the gap between rich and poor to dramatic improvements in environmental quality. A new generation of energy- and resource-efficient technologies revitalizes the state's manufacturing base and creates new jobs. New development patterns and technologies cut through traditional conflicts between development and the environment.

The Future Worlds process was closely coordinated with the development of broad strategies. Out of hundreds of possible strategy packages, or potential combinations of broad strategies, a small number were judged to be fully consistent with the vision. Future Worlds workshop participants also generated sizable lists of possible actions for moving toward the positive scenarios, contributing to an overall list of possible policy actions.

As possible actions were evaluated, one of the evaluation criteria was robustness in the face of change. The four alternative scenarios were used as a basis for asking "does this action make sense across a wide range of plausible future circumstances?" The Future Worlds process explored potential changes in NJDOT's mission to align it with the vision and the recommendations in the plan. The Future Worlds process also suggested several additional objectives for the plan. At the same time, the design of the "bad news" scenario complemented other public involvement processes to identify key problems and causes.

The Visioning Process

A vision was developed, building on the Future Worlds workshops and public involvement process. Initial drafts of the vision were debated at the issue groups meetings. Experts from public, private and not-for-profit sectors, some of whom also participated in the Future Worlds workshops, joined in a series of discussions about the most pressing problems of today, and the most desirable scenario for the future. The vision is presented in Chapter 6.

The vision developed for **Transportation Choices 2020** goes beyond transportation policy to articulate a broad framework of desired future economic and social conditions. From this framework, transportation policies can be made. The vision emphasizes the linkages between transportation choices and other economic and social objectives such as generating a robust economy linked to global markets, providing affordable housing, revitalizing New Jersey's older cities and suburbs, promoting a stronger sense of community, and preserving natural areas and open space. The final vision was used as one basis to establish goals and objectives for **Transportation Choices 2020**, as well as to identify strategies consistent with the vision.

CHAPTER 6 - ELEMENTS OF THE TRANSPORTATION PLAN

The plan consists of three elements: a vision of a future New Jersey and transportation's role in that future, goals and objectives that direct us towards the vision, and strategies and actions we must take to achieve the goals and the vision.

The Vision for New Jersey -- A View from 2020

The public's perceptions of and preferences for transportation have been discussed, as have the strengths, weaknesses, challenges and opportunities concerning the transportation system. Let us assume success in dealing with these issues -- not complete, which would be unrealistic, but a considerable degree of success.

Imagine what living in New Jersey could be like in 2020:

New Jersey's citizens enjoy an enviable quality of life, with greater choice, access and opportunity. The state is widely heralded as a leader in forging successful community and economic development patterns. These patterns, combined with an advantageous location, have made New Jersey a leading competitor in the global economic market. New Jersey's strong economy provides jobs for the labor force's many segments. The state's diverse service sector includes goods movement, tourism and research. The state's manufacturing sector includes advanced, clean, energy- and resource-efficient technologies, as well as innovative low-tech operations. The state's centerpiece of investment is based on fostering "Communities of Place," liveable communities of every size and scale where people choose to live. Development and redevelopment patterns follow a more compact form promoted in the State Development and Redevelopment Plan, and supported by the transportation policies of **Transportation Choices 2020**.

In 2020, the changes of the past have been harnessed to provide a balanced approach to the future. New Jersey's state, regional and local policies are aggressively protecting valued natural and historic areas, open space, farmland and recreational lands. The state has achieved the mandates of the Clean Air Act Amendments, in part through creating an efficient transportation network with a range of choices and connections for those who walk, bicycle, or take buses, trains, automobiles, or planes. Goods movement is a strong component of the state's economy, supported by a multi-modal system which connects road, rail, port, and air. New Jersey's citizens are able to travel with greater access and mobility than ever before. New Jersey's major activity nodes are connected to each other, and with neighboring regional centers such

as New York and Philadelphia. Transit-friendly centers are being developed which incorporate the liveability of traditional small towns through easy access between homes, shopping, work, services, restaurants and other amenities. Whether city or suburb, new or redevelopment, new comprehensive and coordinated planning processes have proved to be instrumental in creating an improved quality of life, from preserving natural resources to saving money, to preventing crime, to reducing alienation from public life and fostering greater tolerance and civility.

Transportation choices made in the 1990s have been crucial to the successes New Jersey has achieved in 2020, and will achieve in the years beyond. Transportation decisions and investments are coordinated with land use and other public investment decisions, private initiatives and public-private partnerships to guide new development and redevelopment. These choices, and the coordinated approach, spur both desirable growth and desirable patterns of growth. Transportation infrastructure investment decisions -- whether to invest in maintenance, replacement, expansion, or a higher quality of transportation service management -- make the state's transportation networks more efficient and effective.

Between the reality of the 1990s and the vision for 2020, a desire and a willingness to change brought an atmosphere of energy and innovation to solving problems. To achieve these changes, a greater number of constituencies were part of finding and implementing the solutions. The public became an active participant in the decision-making process, informed about transportation needs, costs and benefits. Necessary changes were made in the organizational culture of transportation agencies, and state government in general. Agencies and transportation providers began by recognizing that the needs of affected constituencies are a crucial component in the decision-making process. This new partnering between providers and consumers generated the political will necessary to provide stable transportation funding and allow consistent, long-term investments around the goals reached by consensus.

The Plan's Goals and Objectives

The plan's goals and objectives, established after much discussion with the issue groups, constitute the first step in moving New Jersey towards our vision for 2020. These goals are broad concepts which will create the New Jersey, and transportation system, we desire. The objectives nested under each of the goals are more specific, achievable improvements that advance that particular goal. Both are provided in Exhibit 14.

The plan's objectives, when linked with performance measures, serve as a basis for judging whether strategies and actions established in the plan are moving us toward our goals. Continued use of the goals

and objectives and associated performance measures will serve as a check for decision-makers as the plan is implemented.

The goals and objectives address five critical issues for customers of New Jersey's transportation system. The first three goals each address aspects that affect and are affected by the transportation system -- the economy, quality of life and land development patterns. The fourth goal addresses how to improve the quality of the transportation system. The fifth goal addresses how to achieve the first four goals in a realistic, cost-effective manner.

The economic goal **(Goal 1)** is met by using transportation to provide access to more jobs; by reducing the cost and improving the efficiency of moving goods within the state; by serving growing markets better, especially international markets; and by using transportation as a tool to strengthen the critical sectors of our economy, such as tourism.

The quality of life goal **(Goal 2)** sets out the expectation that the transportation system can be made to have fewer negative and more positive impacts on our quality of life -- by making the system safer and less stressful; by providing more choices for travel so we may more freely choose the transportation options that best meet our needs; by opening access to the state to all segments of our society; and by doing less damage to both our natural and built environment.

The land use goal **(Goal 3)** tackles the thorny area of development. The link is well-established between the way we use our land and the transportation system. With a formal state land use plan in effect -- the SDRP -- this goal serves to support its principles.

The quality of the transportation system -- how to make it more efficient, attractive and effective for the system's users -- is addressed in **Goal 4**. The system is made more efficient by containing costs while improving the quality of the product. The system is made more attractive by reduced travel times and delays; improved reliability, comfort and convenience; a greater feeling of security; and reasonable costs to the consumer.

How we can accomplish the four other goals in the most inclusive and innovative ways, while recognizing fiscal constraints, is addressed in **Goal 5**. By listening to and responding to the needs of the customer, by educating the customer and providing information, by creating new implementation mechanisms, by developing and utilizing technology, and by establishing stable and adequate funding levels, we can realize the plan.

Measuring Goal Achievement

We must periodically assess the performance of New Jersey's transportation system against the goals and objectives established for the plan. These assessments will help focus our efforts to make real progress towards achieving the goals and objectives. These assessments should be reported to the public to generate continued support for necessary actions, and the financial resources required for these actions.

EXHIBIT 14
GOALS AND OBJECTIVES

1. **Promote Economic Development.**
   a. Improve access to more job opportunities.
   b. Provide for more cost-efficient movement of goods.
   c. Upgrade intermodal facilities and access to them.
   d. Improve access to passenger and freight facilities to serve international markets.
   e. Stimulate tourism.

2. **Improve the Quality of Life for Users of the Transportation System and Those Affected by Its Use.**
   a. Improve safety on the transportation system.
   b. Meet or exceed environmental standards.
   c. Provide mobility for all segments of the population.
   d. Provide additional transportation choices.
   e. Reduce stress associated with traveling in the state.
   f. Reduce the need for travel.

3. **Use Transportation to Shape Desired Development Patterns Consistent with the State Development and Redevelopment Plan.**
   a. Invest to support and strengthen "Communities of Place" to focus growth and development.
   b. Preserve and protect open space and environmentally sensitive areas.
   c. Advance development patterns and land uses that can support a greater range of transportation services.

4. **Improve the Effectiveness, Efficiency and Attractiveness of Transportation Services Responsive to the Needs of the Customer.**
   a. Reduce travel time and delays.
   b. Improve reliability.
   c. Provide affordable transportation services.
   d. Increase convenience for transportation users.
   e. Improve comfort and amenities for transportation users.
   f. Make access to the transportation system easier.
   g. Encourage greater energy efficiency.
   h. Reduce crime and the perception of crime on the transportation system.
   i. Raise the quality and increase the productivity of the transportation system, while reducing costs.

5. **Improve the Process of Providing Transportation Facilities and Services.**
   a. Involve the customer in the process of service and system development and use.
   b. Provide adequate information and public education to encourage informed customer participation in decision-making.
   c. Create regional and local linkages for transportation and land use development decisions.
   d. Establish partnerships among all levels of government, and with the private sector, to provide transportation improvements.
   e. Develop and use both proven and innovative technology.
   f. Provide a stable, dedicated and adequate source for funds for transportation.

While many agencies monitor aspects of their facilities and services, most concentrate on operational measures -- what they do. These performance measures are usually "input measures" -- how many dollars invested -- or "output measures" -- how many miles paved, for example. These measures are essential to managing any business. But to assess whether they are achieving strategic goals and objectives requires "outcome measures" -- the level of service or conditions which result from transportation programs and actions. Surveys of public satisfaction with the transportation system are useful to managers, but an objective measure of how well the system performs relative to goals and objectives is also useful for directing actions over time.

The goals and objectives established for the plan are not specific to any one mode or agency. Improving access to more job opportunities, for example, should reflect transit as well as highway entities, and state, local government and toll authority facilities within the highway mode. A collaborative effort will be required to define and measure achievement for each objective.

Differentiating between operational and strategic performance measures, as discussed below, is one way of dealing with these issues.

Operational Performance Measures

Institutional: Operational performance measurement, where it is done, is generally specific to an agency. NJ TRANSIT prepares summaries for its quarterly "Vital Signs" report. NJDOT monitors program development and delivery for internal management reports. Special authorities and private transportation providers monitor their own operations, although not always on a consistent basis.

Frequency: Most operational reports are short term, on monthly, quarterly and annual cycles. In some cases different items are reported by season -- snow removal and grass mowing along highways, for example.

Measures: Most operational measures are "input" -- how the agency uses its financial and staff resources -- or "output" -- what the agency has produced in each time period. Internal operational reports rarely deal with outcomes, even for a single agency.

Standards: Performance standards or targets for operational measures are often set to assess success. Data accumulated over a period of time is important, however, in setting realistic standards or targets. The

trend for some performance measures may have been negative, and slowing the decline represents a successful step towards turning the situation around.

Orientation: While of interest to the public, operational performance measurement systems are management driven and agency oriented. They are mode specific and do not lend themselves easily to cross-industry, agency or modal comparisons.

Strategic Performance Measures

Institutional: No single agency has a broad, strategic performance reporting mechanism. Collaboration by a number of agencies will be essential to establish a comprehensive mechanism to gauge progress in meeting goals. Agreement may be easier on a broad, subjective assessment of progress, rather than on quantitative targets.

Frequency: Strategic performance is best measured over the long term. Changes in system performance are usually gradual. In general, monthly or even quarterly reports will show little change. The cycle for strategic data collection is longer, often multi-year and sometimes no more frequent than the decennial US Census.

Measures: NJDOT has monitored outcomes, such as safety and pavement and bridge condition, for several years. The six management systems now under development will allow us to examine outcome measures for public transportation, congestion and intermodal terminals as well. Outcome measures for many other goals and objectives will be difficult to construct. Strategic measures for some goals and objectives will reflect changes in the environment in which transportation functions, as much as changes in the transportation system itself.

Standards: Quantitative performance measures, or targets, are less useful for strategic performance measures because slower movement towards success can be interpreted as failure and erode public support. Customer/stakeholder participation in an aggregate and subjective "letter grade," analogous to school report cards, may be more appropriate.

Orientation: The public is not interested in who provides which elements of the transportation system, but in the service it receives. A strategic report card must cut across several dimensions: modes, passenger and freight, agencies and institutions, and public and private sectors.

In summary, both operational and strategic performance measures have their place, and both will be pursued in the future.

Report Card

Measuring the success of **Transportation Choices 2020** will require new efforts by NJDOT and other transportation providers. Both strategic and operational report cards will be developed after the plan is completed, and these should be presented to the customers. Chapter 8 identifies the implementation framework which will be used to develop the report cards.

The Plan's Strategies and Actions

To meet its transportation goals, New Jersey must deal with its problems and challenges, and build on its strengths and opportunities. Strategies to address problems and challenges, and strengths and opportunities, must flow from the vision and goals and objectives. Strategies include all modes -- public transit, roads, freight, aviation, ferries, bicycles and pedestrians. This section presents the strategies that are emphasized in the plan, and the actions that we must take to implement them. Actions under each strategy can sometimes be applicable in other strategies. Specific "showcase actions," which have been selected for early implementation, are presented in Chapter 8.

Eight strategies form the essence of the plan. They can be simply stated. Make certain that the transportation system is as safe and secure for the public as possible. Maintain, repair and upgrade the system we have. Expand the system judiciously, but enhance current service by using what we have more intensively. Harness technology to work for us, and adopt management practices to make the system work more efficiently. Form partnerships with those whose efforts will play a major role in accomplishing the plan's vision and goals -- local communities, agencies and the private sector. And lastly, make sure we have a two-way communication and education process among the service providers and customers because ultimately this is the way policy is translated into action.

Each strategy contains some actions which represent new ways of doing business. New initiatives may come from NJDOT, or others. They may require taking on new responsibility or new legislative authority. New designs and standards may be necessary. Many involve changing the public's perception of problems and solutions. This will require education, information and discussion. NJDOT and NJ TRANSIT must work together with communities and groups to overcome the political, institutional and technical barriers to implement these actions.

Some actions in each strategy are currently underway by NJDOT and other responsible agencies, and are considered vital to meeting New Jersey's transportation goals because of their effectiveness. A diminution of these efforts will mean a deterioration from today's levels of performance. But an effective action today does not mean it cannot be made to be even more effective tomorrow. Some current actions can be improved by expanding them, or altering them significantly. Some current actions may have barriers which need to be overcome with concerted efforts.

Evaluation Criteria

Goals and objectives for the state's transportation system can be used to select which actions from a long list of possible actions should be emphasized in this plan. To have the goals and objectives serve this purpose, each goal was rephrased in the form of a question. Each objective was converted into an evaluation criteria, to more directly set priorities and make judgments. Although cost effectiveness cannot be assessed for actions that are not site specific, NJDOT, NJ TRANSIT, the consultant team, and members of the issue groups made judgments on the cost effectiveness of these generic actions.

For each action, benefits were assessed by asking four questions, which correspond directly to the first four goals:

- *Does the action help the economy of New Jersey? Does it reduce the cost of freight movement? improve access to employment centers? suburban jobs? intermodal facilities?*
- *Does the action improve the quality of life in New Jersey? Does it reduce accidents? air pollution? loss of open space? serve people without autos? provide choices?*
- *Does the action shape development patterns consistent with the State Development and Redevelopment Plan? Does it help establish and strengthen "Communities of Place"?*
- *Does the action improve the effectiveness, efficiency and attractiveness of the transportation system? Does it reduce travel times? crowding? transfers? improve security? provide information? add parking at stations?*

The fourth goal raises the question of cost effectiveness, no matter what the level of benefits may be:

- *Is the cost of the action within reasonable bounds for the benefits obtained?*

The last goal, improving the process, raises the question:

- *Can the action overcome non-financial barriers to its implementation?*

These questions lead to a final "reality check" to evaluate the proposed action:

- *Is the action relevant to the themes of the plan? Is it customer responsive? Does it encourage partnering? Does it utilize private sector strengths? Does it meet the needs of our diverse population?*
- *Is the action realistic and sensible, rather than being illusory and far fetched?*
- *Is the action achievable, rather than having barriers that place it beyond reach?*
- *Is the action consistent with other actions?*
- *Does the action move us toward consensus?*

The following chart, Exhibit 15, shows how this qualitative evaluation system was used to select the actions included in the plan.

EXHIBIT 15

ACTION EVALUATION PROCESS

If the level of **Benefits** are:	If the **Cost Effectiveness** is:	Is it **Realistic:** Can it be done?	Then the **Outcome** is:
high	high	yes	include
high	high	no	include, but work to overcome problems
high	low	yes	possible, assess site specifics
low	high	yes	include, but recognize limitations
high	low	no	reject
low	high	no	reject
low	low	yes	reject
low	low	no	reject

A wide range of actions was examined and weighed against the criteria discussed above. Those selected for emphasis in the plan are listed and discussed below. They are grouped into eight general strategies for discussion purposes.

Some of these actions are new initiatives, sometimes requiring agencies to take on new responsibilities; legislative authority may be needed in some cases. Other types of actions are already underway, but require a new emphasis because of their importance in the plan. Other actions must be continued; any diminution could result in a deterioration of current levels of service. Some actions are highlighted in bold script.

These actions, termed **"showcase actions"**, are slated for immediate attention. Implementation steps for these actions are presented in Chapter 8.

Strategy A: Support the Safety, Security and Health of the Transportation User

Objective: To provide for the safety, security and health of transportation customers who are affected by the design and operation of facilities, vehicles and the actions of other users.

The first order of business for the New Jersey transportation system is to ensure a safe and secure travel experience for the people of New Jersey. Being safe means minimizing, as much as possible, accidents to persons and property. Being safe also means traveling in a healthy environment, with minimal air, water and noise pollution, and stress. Feeling secure is important on trains and buses, and in cars, but also extends to bus and train stations, platforms, park-and-ride lots, and highways.

The importance of personal safety cannot be minimized. If current conditions remain the same through 2020, about 20,000 people can be expected to lose their lives on the state's roads. Safety improvements to the highway system begun now can significantly reduce this number in the future. Safety improvements are vital to public transportation and its facilities. For public transportation, the perception of security is as important as the reality because a sense of security will encourage use.

To promote safe driving, NJDOT and DMV will initiate a stricter and more thorough vehicle safety inspection system. More comprehensive driver, pedestrian and cyclist safety programs are proposed for schools, including the importance of sharing the road with bicyclists and pedestrians. NJDOT will encourage employers to initiate or continue similar programs. Also, New Jersey will promote safer bicycle and pedestrian environments.

NJDOT will intensify ongoing efforts to make roads safer by improving substandard and dangerous roadway alignments, installing guide rails, and improving drainage on state highways. NJDOT will coordinate with the State Police to intensify speed limit enforcement. NJDOT will extend its pilot "Incident Management System" to all state highways. NJDOT will work with communities on safety-related issues, such as how to create safer crosswalks.

NJ TRANSIT must continue early detection of safety problems for both bus and rail vehicles and rail rights-of-way. NJ TRANSIT's program for high-level platforms, although requiring rolling stock and other costly improvements, needs to be continued.

The health impacts of the transportation system can be eased in a number of ways. Motor vehicles are a prime source of pollution, particularly in densely populated states like New Jersey. Increasing ridership on public transit must be encouraged. Stricter emission inspections, as required by the CAAA, are the most direct way of reducing car pollution. A more dramatic approach is to simply remove older vehicles, which are the prime air polluters, from the road by purchasing them. Employers can explore options to reduce peak commuting congestion, with programs such as flex time and other ways of facilitating carpooling.

Improving the sense of security on public transportation will require providing better lighting at stations, in parking lots, and on walkways leading to stations. Security can also be enhanced by adding personal presence to public places. Local community and business support of initiatives such as the "Adopt a Transit Station" program will help. They can enliven a station area and increase the sense of security through attractive facilities and anti-crime patrols. Vendors and small retail stalls are a significant component of security, particularly as automated ticketing reduces the number of ticket personnel needed.

Technologies which will create a safer environment also must be considered. Examples include NJ TRANSIT's driving simulators for bus drivers, advanced signal and communication systems to coordinate Amtrak's high-speed trains and local NJ TRANSIT commuter trains, and advanced detection devices on tracks.

Actions for Strategy A

NEW INITIATIVES:

- **Devise a "Cash for Clunkers" program.**
- Provide more sophisticated traffic surveillance for highways and transit.
- **Establish a customer response program.**

NEW EMPHASIS:

- Develop Incident management plans for all state highway facilities.
- Continue to develop better pothole filling materials and methods.
- Provide better lighting and amenities at transit stations and stops.
- Establish more strict, and more thorough, vehicle safety-emissions inspections.
- Encourage employer-based seatbelt and safety programs.
- Expand driver/pedestrian/cyclist safety education.
- Improve publicizing of the "800 POTHOLE" number.
- Provide guidance to communities on traffic calming, safer pedestrian environments and other measures for safer streets.

- Support "share the road" campaigns at state and local levels.
- Encourage construction of sidewalks along highways in town and village centers.

CONTINUE:

- Improve roadway alignments and intersections.
- Correct drainage problems to prevent flooding and icing.
- Encourage local stewardship of transit stations by non-profit groups and the business community.
- Upgrade roadway and parking lot lighting.
- Construct high-level station platforms.
- Eliminate, consolidate or improve railroad grade crossings.
- Upgrade roadways to provide bicycle compatibility.

Strategy B: Maintain, Repair and Upgrade Infrastructure

Objective: To improve and upgrade the maintenance, repair and renewal of existing transportation infrastructure.

A strategy to maintain, rehabilitate and replace New Jersey's transportation infrastructure must receive a strong emphasis. New Jersey has an immense investment in its highway, bridge, rail, port and aviation infrastructure. While some new facilities will be created, it is this existing infrastructure, developed over many generations, which will have to carry the bulk of passenger and freight traffic between now and 2020. Deterioration and other inadequacies in this infrastructure will be felt by frustrated travelers and shippers, and ultimately by the economy. This strategy does not call for merely preserving or replacing facilities as they were originally built. Many older facilities do not meet modern standards for safety, speed, loading and clearances and their service is seriously compromised; for many facilities, deficiencies of long standing will have to be corrected.

Transit actions to implement this strategy involve maintaining rail rights-of-way, maintaining and replacing signals and structures, and maintaining and replacing transit vehicles on a regular schedule. Of major importance is improving and replacing, where necessary, outmoded bus maintenance facilities inherited by NJ TRANSIT from a number of private operators. Upgrading transit infrastructure to modern standards will mean more convenience for passengers and often lower costs for the operator.

Highway actions which maintain and repair pavements and bridges will be emphasized in this strategy. NJDOT's pavement and bridge management systems will be developing more cost-effective approaches

which integrate capital and operating investments to minimize life-cycle costs. The rate of highway deterioration is significantly affected by how much maintenance staff time is expended. With reductions in NJDOT staff projected to continue, adequate day-to-day maintenance, such as cleaning out gutters and catch basins, will be difficult to provide. Highway and bridge materials and designs that are less maintenance-dependent must be developed and applied.

Serious consideration should be given to removal, rather than replacement, of unnecessary bridges at the end of their useful lives. Many such bridges date back to the horse-and-buggy days, and other roads and crossings may provide adequate access. A review should be undertaken of regional road networks to identify bridges that need not be replaced when parallel or other alternate routes are taken into consideration. However, this review should also take into consideration the existing or potential use of the bridge by bicyclists and pedestrians.

Access facilities are part of transit and highway infrastructure and actions to improve these facilities will also need emphasis. For transit vehicles and key stations, provision for access by the handicapped must be made. The pavement at transit and rideshare parking lots must be improved, where inadequate. Sidewalks which provide access within local communities and to transit stations and stops must be maintained. The shoulders of local and many state highways are important to pedestrian and bicycle mobility and need to be maintained clear of debris and weeds for their safe use. Where there are no shoulders or they are inadequate in width, widening will be beneficial to vehicle safety and highway maintenance as well as to pedestrians and bicyclists.

The infrastructure for freight movement must also be maintained, replaced and upgraded. Pavement and bridges must be upgraded on routes connecting the interstate system with truck and intermodal terminals where inadequacies are impeding efficient movement. Lane constrictions and inadequate clearances that create bottlenecks should be removed; for example, where critical spans prevent double-stack trailer-on-flat-car service to important intermodal terminals. In northern New Jersey, the environmental issues that keep shipping channels from being dredged to their former depth must be resolved.

Actions for Strategy B

NEW INITIATIVES:

- Develop pavement and bridge designs and materials that require less maintenance.
- Identify and eventually phase-out bridges whose replacement is not warranted.

NEW EMPHASIS:

- Improve transit and rideshare parking lots.
- Make transit vehicles and key stations accessible to the handicapped.
- Maintain and improve sidewalks and bicycle routes.

CONTINUE:

- Maintain and upgrade rail transit rights-of-way, signals, and structures; install welded rail.
- Maintain and replace, when necessary, transit vehicles and maintenance facilities.
- Apply bridge, pavement and public transit management systems to minimize life-cycle costs.

Strategy C: Maximize Service Provided by Current Transportation Infrastructure

Objective: To maximize the quality, productivity, reliability, safety, and efficiency of services provided by the existing transportation infrastructure.

Actions to operate and improve existing transportation infrastructure to obtain the maximum in performance -- safety, speed, capacity and convenience, for example -- are emphasized in the plan. This may require capital investment on a moderate scale but, more importantly, it requires creativity in managing and operating systems.

For highways, it means more "hands-on" operation rather than, as in the past, building facilities and leaving them to run themselves. At intersections along a highway, integrated, computer-controlled signal systems can optimize capacity and minimize delay. More traffic engineering solutions will be needed, such as turning lanes and jughandles as well as turnouts for buses. Metering access at highway entrances can also improve capacity.

Some actions are aimed at changing traveler behavior. Adding preferential bypass lanes for HOVs at metered entrances, at signals, along shoulders or at toll booths will encourage ridesharing. Discounts to off-peak users of toll facilities can be an incentive to change travel time and reduce peak hour congestion. Other such actions are discussed in the "Partnering with Local Communities, Businesses and Agencies" strategy.

Highway incident management plans, drawn up cooperatively by transportation operators, local governments and emergency response units, will enable a rapid response team to quickly remove accidents, breakdowns and roadway spills and to divert traffic around such incidents. Clearer, more legible and better located

highway signs will also enhance system service. They are helpful to local drivers and essential to out-of-town tourists or truckers. A sign "Swat Team" primed to respond quickly to customer complaints would be a positive action. Bicycle lanes on streets and highways designed or modified to attain safe operating conditions will increase mobility.

To maximize transit service, additional shared use of freight lines should be investigated. Extensions of electrified service will provide faster service and eliminate transfers for some riders; high platforms will also speed up service. Rail travel time can also be reduced by eliminating underutilized stations where there are adequate alternative stations. Transfers between bus routes can be facilitated by creating "transit hubs" and coordinating schedules. Bicycle storage at stations and stops, and on vehicles, will extend transit's market area. Better directional signs to transit stations and stops will help attract new riders.

There is a need to support the continuation of airports that serve local and regional aviation. Funding needs to be provided to maintain and enhance public use airports and to assist local communities in purchasing privately owned airports which are for sale.

Preserving strategic rights-of-way for bicycle trails, transit lines, stations, parking and highways is prudent. Public action to retain general aviation airports is also warranted, as they often are prime targets for development. Access management plans, developed jointly by NJDOT and local governments, can preserve the capacity of state highways from being lost through uncontrolled development of adjacent land.

Actions for Strategy C

NEW INITIATIVES:

- Provide through-routing of transit services across jurisdictions/agencies.
- Implement integrated traffic control and information systems exploiting Intelligent Transportation System (ITS) technologies.
- Implement Commercial Vehicle Operations (CVO) Intelligent Transportation System (ITS) technologies to improve highway system service to commercial vehicles.
- **Implement Incident Management Team to rapidly respond to traffic incidents on congested highways and minimize incident-related traveler delays.**
- Implement strategies to reduce travel demands during periods when transportation facilities and services are heavily congested.
- **Encourage a market-based congestion pricing strategy by rewards rather than penalties.**

NEW EMPHASIS:

- Improve transit passenger information systems and services (e.g., shoulder lanes, signal pre-emption, toll bypass lanes, reversible lanes).
- Establish priority treatment for high-occupancy vehicles.
- Expand parking capacity and access opportunities at transit stations where capacity is constrained.
- Eliminate physical barriers that restrict trucks on strategic truck routes.
- Provide clearances for double-stack rail freight services.
- Provide a disabled vehicle service on heavily used limited-access highway facilities.
- Step up enforcement of traffic prohibitions, including "no stopping - no standing" rules along bus routes.
- Support airport preservation by assisting local communities in purchasing privately owned airports which are for sale.
- Provide funding to maintain airport approach and departure clear zones.
- Provide bicycle and pedestrian facilities on bridges.

CONTINUE:

- Operate coordinated transit schedules to increase accessibility and reduce transfer waiting times.
- Construct high-level commuter rail platforms.
- Extend electrified rail lines.
- Improve rail signaling.
- Implement commuter rail station improvements.
- Eliminate or provide enhanced protection for commuter rail grade crossings.
- Negotiate shared trackage arrangements between rail passenger and freight services.
- Install bus turnouts on selected highways.
- Provide bicycle storage on transit vehicles.
- Increase the number of trains on which bicycles are permitted.
- Provide bicycle facilities at train stations.
- Improve capacity to operate during adverse weather conditions.
- Improve traffic signs (e.g., enhanced maintenance through a "Sign Swat Team," customer complaint line, "way-finding" signs to intermodal passenger and freight terminals).
- Reduce traffic conflicts at intersections, turn lanes, and jughandles.
- Enforce traffic access management where highway access is not fully controlled.
- Preserve strategic transportation rights-of-way.
- Preserve strategic general aviation airports.
- Implement bicycle and pedestrian pathways on existing transportation rights-of-way as part of an overall system.

- Provide funding to maintain and enhance public use airport systems.

Strategy D: Provide for Strategic System and Service Expansion

Objective: To evaluate and prioritize programs and projects which will expand the carrying capacity and services of the existing transportation system beyond its present limits.

This strategy focuses on selected expansion of the highway and transit network. From the 1950s through the 1970s highway construction continued unabated. The state's toll roads were constructed, the interstate system largely completed, and state highways widened and upgraded to limited-access facilities. With the completion of Interstate 287 and the Trenton Complex, the last interstate new highway construction has occurred. Remaining highway expansion proposals, either widening, extensions, or completion of missing links, are almost all mired in controversy. Most people recognize that further large-scale expansion of the highway network will be difficult. Highway budgets now focus on maintenance of this vast highway system.

By contrast, the scope of the transit system has diminished since the 1950s with abandonments of many rail lines. In the early 1980s, the emphasis was on a program of maintenance and equipment replacement to recover from years of under-investment. In the mid-1980s, however, plans were made for expanding and reconfiguring what remained of the rail network. Commuter and Amtrak services were restored to the Atlantic City Line; the Kearny Connection and Secaucus Transfer are under construction; and the Montclair Connection was approved after years of negotiation with the local community. These last three projects will unite the 10-line network in northern New Jersey into one system, providing better access to New York and making rail trips between New Jersey points possible.

NJ TRANSIT is also advancing the construction of two light rail lines - one along the Hudson River waterfront the other connecting points in Newark and Elizabeth. In various stages of study are new or restored rail lines in Burlington and Gloucester counties, on the NYS&W, along the West Shore, and in the Middlesex-Monmouth-Ocean corridor. Finally, the need for expanded transit capacity across the Hudson to midtown Manhattan is being studied. During the 1970s and 1980s the bus network in the state was also diminishing. Changes in service almost always meant less service. With the advent of the WHEELS program in 1994, new experimental services are being tried to respond to the shift of jobs to the suburbs.

Not surprisingly, the patterns of decline and growth in the freight arena have paralleled closely the trends for the highway and transit networks. Reorganization and restructuring have returned railroads to profitable

enterprises in recent years. Meanwhile, increasing highway congestion problems facing passenger cars are affecting trucks as well.

This plan recognizes both of these trends -- a slowdown in highway expansion and an accelerated expansion of the rail transit network. But to merely assume that these trends can or should extend to 2020 would be overly simplistic. A highway expansion project is not automatically undesirable just because it expands highway capacity. Neither is a transit project automatically desirable because it may restore a line that operated years ago. The goals of the plan can be used as a guide to where strategic expansion is appropriate. Highway congestion cannot be allowed to damage the economy. We will need to serve those businesses already in place and new ones. But we cannot expand the highway network where it will work against the goal of a center-oriented, sprawl-discouraging land use pattern. As for transit and highway expansion projects, they will need to pass tests of cost effectiveness that include the cost of operating the service once it is built. And if a project opens up undeveloped areas to more sprawl development, it will not achieve the goals of this plan.

Pedestrian and bicycle mobility can also be enhanced through strategic expansion of the pedestrian and bicycle network. Constructing short linkages for pedestrians and bicyclists can greatly expand the extent to which these travel modes can be useful in suburban New Jersey. Linking adjoining residential neighborhoods, connecting commercial areas to each other, and linking office parks to surrounding communities can involve very small expenses which permit entire vehicle trips to be eliminated. Constructing paths between strip shopping centers and nearby office complexes would help to reduce the lunch-time peak hour which plagues many suburban areas.

Similarly, "missing links" in bicycle compatibility can be eliminated through strategic roadway improvements such as shoulder construction. This is especially important at major bridges where no alternative travel path may be available.

Given the above, this strategy focuses on expansion of capacity and service for both people and freight to meet the increased demands for travel on both the highway and rail networks in an efficient and cost-effective manner. Specific projects will need to be judged on their merits, and formulated in partnership with the communities through which they go and stakeholders from the business, labor, environmental and civic sectors.

Highway expansion projects fall into four categories -- widening of existing roads, completion of relatively short missing links, bypasses of serious points of congestion, and new highway extending into new areas.

Because of the CAAA, projects expanding highway capacity must be evaluated to determine their effect on air quality. Therefore, highway lanes added or proposed by NJDOT often have been, or will be, dedicated to high-occupancy vehicles (HOVs) to encourage ridesharing. There are many options for how HOV lanes can operate: what the required occupancy must be (two or more, three or more, etc.), whether trucks should be permitted in the lanes, and even whether single-occupant vehicles should be allowed in the lanes if they pay for the privilege. A few criteria for selecting the best option in individual cases can be suggested, such as: person throughput, VMT growth, delay reduction, cost, and possibly revenues, if tolls are used.

The completion of highway "missing links" should depend on whether they meet the goals of the plan. Projects that serve to increase access to existing centers and that directly assist the economy of the state only through the support of tourism or the movement of truck freight are consistent with this plan. The construction of bypasses around existing congestion points is a difficult issue. Some of these projects may impair the economy of town centers by re-routing traffic around them; conversely, some may free up downtowns for greater access to local activities -- commercial, social and recreational. Others are merely dealing with longstanding highway bottlenecks for which there are no other transportation remedies. This plan can be less ambiguous on the extension of new highway alignments into new areas. These projects act as development "can-openers." They encourage sprawl and discourage the centered development this plan promotes. Currently there is not a list of "missing links." The transportation development process will identify the need for "missing links."

As for transit expansion, this too falls into a number of categories. Some actions can expand the capacity of the existing network, such as signals, switches and track improvements on the rail network or higher capacity vehicles, thereby making it possible to provide more service through existing corridors. These actions often are identical to maintenance actions but could include some upgrading to add service. Others extend the network on new or restored alignments. Interstate transit expansion needs to be considered in coordination with the plans of the New York and Philadelphia metropolitan areas and their transit agencies - SEPTA, PATCO, PATH, AND MTA. There may be substantial advantages to working together to advance the travel needs of New Jersey residents and workers and those adjoining states simultaneously. And bus expansion can fall into both categories -- an intensification of service on existing lines or the expansion of routes into new territories. Advancement of each of these actions depends primarily on whether the demand will be there if the service is provided. Each will have to face the test of cost effectiveness in an era of tight budgets. Finally, like highway expansion, transit projects will have to pass the tests of whether they help the economy, strengthen our centers or promote sprawl.

Freight services can be expanded by deepening port channels to accommodate bigger ships. The potential for floating containers or trucks on barges across New York harbor, as is now done with rail cars, should be studied.

Actions for Strategy D

NEW INITIATIVES:

- **Give priority to elimination of bottlenecks on key freight and intermodal access routes.**

NEW EMPHASIS:

- Use tax and regulatory incentives to encourage businesses to stay or locate in areas that support the goals of the state's land use policies.
- Expand transit capacity with double-deck cars, longer trains, more parking and more train storage.
- Expand rail capacity with signal, switches, track and yard improvements.
- Expand passenger service on shared rail freight lines.
- Extend urban bus service to suburban areas.
- Deepen and widen port channels to provide more freight capacity.
- Explore the construction of additional trans-Hudson facilities.
- Add more walkways and bicycle paths, especially as components of existing systems.

CONTINUE:

- Construct additional highway lanes for high-occupancy vehicles.
- Discourage highway expansion in favor of other options, whenever possible.
- Complete selected missing links.

Strategy E: Exploit Technology

Objective: To exploit the opportunities provided by innovative technologies to provide new products and services designed to improve the transportation system.

This strategy addresses how technology can be used to the benefit of the transportation system. Improvements in communication, information handling, and other technologies continue to advance at a dizzying pace. New technologies can assist in meeting the goals of this plan. Yet, we must understand that new technology will not be cheap; major capital costs will be involved, and a commitment to new staff and operating costs will be required. Nor can we assume that a technological fix will replace existing systems. Nonetheless, actions that rely on advances in technology warrant encouragement.

It is not necessary for government to develop these technologies. In many cases the profit motive may be enough encouragement for private firms to undertake research and development. Government may have only a catalytic, coordinating, and regulatory role. In other cases, government may need to play a more pro-active role, making known its needs, defining the size and nature of the market, and establishing new mechanisms for the development of technology.

The information revolution holds much promise for technological applications. It can provide more and better information for travelers at every stage of their trips. Before the trip, information given to either regular users of the system or to out-of-state travelers, including tourists, can assist in choosing the best mode and route. During the trip, it can divert travelers to less congested or incident-free locations. Travel information supplied during the trip can be done via electronic signs on the road, through direct communications to motorists via telephone or other electronic devices, or in emerging in-vehicle "smart" systems. Communications to emergency vehicles to provide quick responses to incidents can minimize traffic impacts. These all can be part of a transportation operations center using advanced or Intelligent Transportation Systems (ITS). Emergency 9-1-1 numbers can give motorists a two-way option for reporting problems. A statewide stolen car recovery program can utilize electronic vehicle tracking devices obtained through the DMV.

Telecommunications advances are making their mark on commuting, with home telecommuting becoming a realistic option for many New Jersey workers. This trend is supported by this plan.

More customer-friendly technology is recommended in a number of areas. For transit, a regional fare card should be created, with participation by all the transit operators in New Jersey and the neighboring metropolitan areas of New York and Philadelphia. Eventually, a regional transportation payment card with one medium used for all transportation services, and with charges collected electronically, should evolve. A weigh-in-motion system for truckers will reduce delay, and an identification system for freight containers will better track inventory.

Electronic toll collection systems will be gradually installed at each of the toll collection locations in the state and the region beyond. Time-of-day, day-of-week road pricing becomes workable when the majority of motor vehicles pay tolls electronically, as is already the case at the Tappan Zee Bridge. Single-occupant vehicle tolls on HOV lanes could also use this technology. The DMV should pursue technologies to permit computer on-line registration with payment by credit card.

In cooperation with other northeastern states, New Jersey can take the lead in requiring significant reductions in vehicle emissions. Changes in vehicle technology can also lead to significantly better fuel efficiencies and power sources for vehicles.

Actions for Strategy E

NEW INITIATIVES:

- Provide integrated, pre-trip information services using on-line computer and television technology.
- Create on-line tourist transportation/attractions information services.
- **Implement integrated regional highway/transit/other transportation facility and service pre-purchased card which can be used to purchase other goods and services.**
- Construct Authorized Vehicle Lanes (AVL) serving multiple travel markets including transit buses, high-occupancy vehicles (HOVs), trucks, and single-occupant vehicles (SOVs) paying a market-based fee.
- Develop and implement an in-vehicle traveler information system.
- Create a statewide 9-1-1 service accessible from cellular phones.
- Implement programs to foster rapid introduction into fleets of low or zero emissions vehicles (e.g., electric, CNG, LNG).
- **Establish a statewide stolen car recovery program utilizing electronic vehicle tracking devices obtained through the DMV registration renewal process.**
- **Develop and implement on-line DMV transaction capabilities which can be paid via credit cards.**

NEW EMPHASIS:

- Install uniform electronic data identification for freight containers.
- Create a multi-modal transportation operations center in New Jersey, integrating real-time information received from the major transportation operators for all major facilities and services.

CONTINUE:

Because this is a relatively new area, this category does not apply.

Strategy F: Improve Management Practices

Objective: To improve the management and businesses practices of NJDOT, NJ TRANSIT, and other state agencies to ensure the delivery of consistent, high-quality transportation services.

This strategy emphasizes changes in the management of transportation agencies that will improve their performance. All areas of government are undergoing scrutiny at this time. Public-private partnerships are

being explored to supply many facilities and services formerly the exclusive responsibility of state agencies. And the demands for increasing economy and productivity by public agencies are also causing changes in the way business is done.

Public-private partnerships encompass a variety of possible roles for NJDOT that take advantage of the profit motive for efficient and effective service. Turnkey projects should be pursued where private enterprise can design, build and, perhaps, operate transportation facilities more quickly and efficiently than government. NJDOT should investigate the potential for new toll roads developed by public-private partnerships, or contracting out the maintenance and/or operation of existing toll roads to private firms. Both NJDOT and NJ TRANSIT should explore public-private partnerships to provide transportation-related services not now offered, or existing services which they do not have the staff to adequately provide.

In managing any large organization, public or private, there is always the potential for changes in current practices that improve performance. These might include: instituting a continuous management improvement process which improves practices through small, steady, incremental steps; establishing employee training programs to enhance their knowledge and skills; experimenting with competitive practices that test out alternative approaches to providing services; developing programs to measure performance and hold employees accountable for results; and empowering management and line personnel - delegating decision-making and providing resources to the level closest to the problem. Total Quality Management -- a process of continuously analyzing individual tasks that require intra- and inter-agency coordination to improve quality at all levels -- needs to be pursued by NJDOT and NJ TRANSIT, as it is at many private agencies.

This strategy also includes innovative actions to better respond to customer concerns. Construction in off-peak hours can avoid congestion and delay, as can maintenance on recreational routes during off-season periods. Providing better information to managers and the public on system performance and customer satisfaction will help in setting service standards and directing programs towards clear objectives. A "report card," noted earlier, is one method of monitoring progress, evaluating success and focusing future efforts.

Actions for Strategy F

NEW INITIATIVES:

- Redesign procurement process.
- Coordinate and integrate the various quasi-public transportation authority transportation service delivery and operations within the state.

- Develop programs to ensure performance and accountability and a Total Quality Management work ethic within state transportation entities.
- Implement innovative financial management practices and systems.
- Develop proof-of-payment fare collection systems.

NEW EMPHASIS:

- Implement design/build, turnkey, and super turnkey approaches to project implementation and operation.
- Explore public/private partnerships for developing new transportation-related services.
- Conduct traffic maintenance activities during off-peak hours to minimize traffic disruption.
- Implement a continuous process for improving management practices.
- Improve the technology used to provide information to managers, the public and operators of the transportation system.
- Provide for competition in service delivery -- including outsourcing -- where it can lead to higher-quality service and/or lower costs.
- Empower management and line personnel.
- Improve employee training programs.
- Continue service agreements with TMAs for delivery of TDM services.

CONTINUE:

- Continue ongoing measurement of customer service quality relative to service standards and progress in attaining goals and objectives, based on development of a report card.
- Exploit traffic mitigation opportunities to encourage mode shifts from single-occupancy vehicles.

Strategy G: Form Partnerships with Local Communities, Businesses and Agencies

Objective: To initiate partnerships with public and private entities; to support and assist them in developing and redesigning travel options for communities and organizations -- encourage alternative modes, relieve congestion, improve mobility, and make it easier to have effective and efficient transportation service.

This strategy calls for NJDOT and NJ TRANSIT to work together with local communities, businesses and other agencies so that the transportation needs of residents and workers can be more efficiently served. Pervasive congestion in New Jersey is in large part due to patterns of development that make the auto the only practical mode for most trip purposes. Changes in the intensity and patterns of land use and in the way businesses deal with employee commuting are effective means of reducing congestion.

Land use and travel behavior directly are related. This relationship occurs at a large scale, involving the intensity of land use and patterns of development. But it also occurs at a more local scale, where the placement and height of buildings and their relationships to the streets and transit services affects travel behavior. At both scales permitted land uses and their design and scale are largely determined by local communities. We must look there if we are to find solutions. This strategy in the plan will hardly solve the many problems caused by the massive movement from high-density cities to low-density suburbs over the past 50 years throughout America. What we can do here is suggest some steps that can be taken in New Jersey. This strategy includes actions that can be taken by both communities and government, working together, to positively affect how transportation is provided and the way the transportation system is used. These actions need to work synergistically, which means not only that positive actions reinforce each other, but also that we need to make sure we are not canceling out positive actions with negative ones.

Transportation planning, like land use planning, needs a broad, cohesive framework from which to act, and tools to implement the framework. Fewer than 50 percent of the state's communities have such a framework, such as a Circulation Element in their municipal Master Plans, a majority of those that do are deficient in addressing various aspects of mobility. NJDOT advocates that communities develop, or update, a Circulation Element, and will provide assistance to communities in their efforts.

Communities can then formulate tools that advance the goals of this plan. These measures can make trips by transit, biking or on foot more attractive, reduce the length of some trips, or even eliminate the need for travel altogether. Zoning for mixed-use development, special transit zoning districts, reduced parking requirements for development near transit, ground-level retail requirements that make walking more attractive, reduced building setbacks, transfer-of-development-rights districts, and clustering of buildings to make transit more efficient are all positive steps. But to make these measures more effective, municipalities must also minimize land uses and densities that guarantee more auto use and make the use of other modes nearly impossible. Communities should consider zoning to limit development adjacent to existing or new highway interchanges, and discourage strip development along highways to preserve capacity for through traffic. Alternatively, centered growth at interchanges could offer advantages over wider sprawl patterns.

Aside from changes in zoning that affect what can be built, local ordinances can also be tools for better-designed streets. These actions can include eliminating dead-end cul-de-sacs by interconnecting streets, thereby reducing trip lengths and making walking and biking less circuitous; providing continuous walkways and bikeways; and improving pedestrian amenities such as lighting, seating, attractive pavement and street furniture. Site improvement and subdivision ordinances should also include street and driveway designs that facilitate the operation of transit vehicles, such as bus turnouts to give buses places to wait and load away

from traffic and turning radii that buses can negotiate. Some towns in New Jersey have established trip reduction ordinances that require developers and employers to reduce peak hour auto use. Advocacy and assistance are the means by which transportation agencies can foster these local actions.

Government can encourage communities through incentive programs. Locally adopted Master Plans with Circulation Elements that are consistent with this plan and the State Development and Redevelopment Plan can receive priority for state assistance for their transportation needs. These plans would encourage infilling and centering of activities. Planning is also needed at a corridor or countywide level, where state and county agencies need to work with individual communities to ensure consistent planning. For its part the state would ensure that the transportation systems it provides would be coordinated with supporting local plans and development decisions.

Because so much of the congestion problem is associated with commuting, it is natural to work with employers to find remedies. The CAAA recognize this by requiring large employers to develop ways of significantly reducing the use of automobiles for travel to and from work. Historically, it has not been the responsibility of employers to provide transportation for their employees or even to be overly concerned about their commute. But a number of factors are now working to change that. First, the increasing unreliability of the highway system to deliver workers on time has begun to affect productivity. Second, longer travel times have begun to truncate the commutershed from which employers can draw, reducing the labor pool. Third, it is clear that the government sector cannot and will not commit to a widespread expansion of capacity of the network to address the problems of congestion. Transportation Management Associations have emerged as a vital link to employers in dealing with the commuting problems of their employees. The nine TMAs in New Jersey not only provide technical support to employers, but also serve as advocates for employers to support needed transportation facilities and services.

Accordingly, the actions that can be advanced by employers are part of this strategy. Some can encourage carpooling or transit use and require little commitment of resources. These actions tend to be supportive of shifts of mode but will have only a limited effect on their own. Re-striping and re-signing parking stalls to favor multi-occupant vehicles and establishing an on-site transportation coordinator, guaranteed ride home, and midday shuttles for lunch and errands are all such actions. Actions are likely to have a major effect on workers' travel choices but require employers to either make a large outlay of funds or substantially change attitudes about commuting among employers or employees. These actions include transit passes, subsidization of vanpools, transportation vouchers and "cashing out" of free parking, which gives those who don't drive alone an amount of money equal to the hidden but real subsidy for parking given to drivers.

Between these two extremes are actions that employers are generally opting for as part of the CAAA submissions. These actions either shift when trips to and from work are taken or reduce the number of trips made to and from work altogether. Flexible work hours, reduced work weeks and home telecommuting fall in this category. One of the reasons that these actions are so popular is that they are being taken by many employers for reasons other than transportation. They are popular with employees because they provide more freedom and there is little sense of the coercion that other actions might have. The costs to employers are low, too. The effectiveness of such actions in reducing congestion will depend on the extent of their use. Many employers do not have operations that lend themselves to these actions and half of all workers in the state work at sites of less than 100 workers, exempting them from the program. While these actions can have some effect on reducing congestion in the peak period, the impact may not be significant.

Whatever employer-based actions are tried, they will need to be supported by the transportation agencies. In some situations this may mean small highway improvements, or expanded transit services. But the partnership must become a "win-win" situation, where government can limit its expenditures and employers will have more satisfied and productive workers. Early, continuous communication among the parties can go a long way to ensure an achievable and successful program.

Additional partnering opportunities arise when private enterprise and public entities identify shared roles in delivering improved mobility. These opportunities range from outsourcing specific services (motor vehicle transactions) or procurement processes (design/build and turnkey implementation) to true joint ventures in technology development and deployment in New Jersey, including shared-risk management for anticipating economic payback. Some examples of the latter include: marketing/operation of electric cars, application of "smart cards" to toll/fare collection, and installation and utilization of fiber optic networks in transportation rights-of-way.

Actions for Strategy G

NEW INITIATIVES:

- **Inaugurate "Community of the Year" program by NJDOT.**
- Provide authority for Transfer of Development Rights Districts and Transit Station Improvement Districts to local governments.
- **Implement Incident Management Teams to rapidly respond to traffic incidents on congested highways and minimize incident-related traveler delays.**
- Create auto-free downtowns.
- Prepare or update Circulation Elements of Municipal Master Plans.
- Provide density bonuses where Travel Demand Management is aggressively pursued.

- Reduce parking ratio requirements based on transit availability; establish trip reduction ordinances.
- **Prepare joint NJDOT-local corridor management plans considering all travel modes; assist in developing mobility plans for all designated centers.**
- Revamp state laws, regulations and practices that discourage employer trip reduction efforts; revamp the Employee Trip Reduction Program into a "point system."
- Include employee representation in partnering arrangements with business.
- Provide employee midday shuttle service.
- Promote four-day work program.
- Install showers at work sites to encourage bicycling.
- Develop peak shifts for tourism traffic.
- Develop snow removal plans for sidewalks along state highways.
- Develop shared use or leasing of rights-of-way for fiber optics, advertising, logo signage, etc.
- Create joint ventures to develop electric station cars.
- Collaborate with the private sector to use Intelligent Transportation Systems (ITS) communication and control systems.
- Provide cash payments in lieu of free parking.
- Dispense transportation vouchers.

NEW EMPHASIS:

- Zone to intensify development at transit stations.
- Prepare pedestrian and bicycle circulation plans.
- Preserve areas for expansion of intermodal freight terminals and for transportation rights-of-way.
- Adopt joint NJDOT-local government access management plans.
- Create disincentives for strip development and control development at new highway interchanges.
- Increase surface and structured parking at transit stations.
- Create partnerships with local communities to support general aviation airports.
- Experiment with developing "transit villages" (e.g., Montclair - Bay Street)
- Provide shuttle services for employees from the work site to transit stations and stops.
- Provide a guaranteed ride home program.
- Establish on-site transportation coordinators in work places.
- Give parking preference to high-occupancy vehicles.
- Use access control authority to secure private participation in facility upgrades.
- Revise TDR (Transfer of Development Rights) law and promulgate regulations friendly to business for infrastructure development.
- Promote transit passes by employers.

- Expand van pool subsidies by employers.
- Create TMA partnerships to implement TDM strategies.

CONTINUE:

- Expand flextime programs.
- Adjust hours to encourage ridesharing.
- Encourage redesign of parking lots, e.g., re-striping or re-signing parking spots to favor multi-occupant vehicles.
- Encourage traditional community designs.
- Eliminate barriers to walking and biking with interconnecting streets and safe highway crossings.
- Establish ground-level retail and other pedestrian-friendly uses and amenities.
- Create infill incentives.
- Continue transit safety program for children.

Strategy H: Educate and Communicate

Objective: To inform the public about the vital relationship of transportation to the state's economy, its fiscal status, its environment and its overall well-being so the public can effectively participate in transportation decision-making; to convey its customers' perceptions of and concerns about transportation to NJDOT.

Education and communication must be a two-way process. The public must be fully aware of the transportation options available to them, the choices, trade-offs, and implications of public actions. Similarly, government must be aware of the public's needs and priorities to serve it well.

The public needs to know more about transportation and its relationship to the economy, the environment and quality of life in New Jersey. There is little understanding about the importance of goods movement or about cooperative subsidies for different modes of transportation. A joint industry-government campaign should be launched, which could include these and other elements:

- Public service TV spots that raise the questions: *How does the supermarket (department store) get filled each day? How do goods from the factory, or raw materials (from mines, farms) get to the marketplace?*

- Media ads, booklets, etc., that address: *How will technology change how we get around New Jersey? Who pays the road workers (bus drivers, train conductors) to fix the road (drive the bus, collect our transit fares)? A primer with graphics to trace where the money comes from and where it goes for transportation. Programs to reduce drinking and driving, increase use of seat belts and child safety seats.*

- School programs, which offer a way to reach the young before their habits are set, could teach young people: *How to walk and bike safely on a street; safety concerns for riding trains and buses and at railroad crossings; travel mode options.*

Primer courses for transportation coordinators at major employers can present the options to single-occupant driving and how to make them happen.

Local planning officials, professional planners and businesses would benefit from more information on transportation. A workshop-style course for zoning and planning boards on zoning, community design and transportation relationships is one method.

As for communication from the public to government, systematic polling, focus groups, forums, and other mechanisms dealing with both general and specific issues will be needed. Different groups should be brought together to share their complaints and opinions. Truckers, bus drivers, intermodal handlers, Turnpike users, Parkways users, Port Authority Hudson River crossing drivers, transit users by line or route, all can provide insightful observations. Progress on achieving the plan should be evaluated by the customers themselves.

Actions for Strategy H

NEW INITIATIVES:

- Conduct workshops on the relationship between transportation and land use decision making for local planning and zoning officials.
- **Conduct an industry-government campaign to acquaint the public with the way goods move in New Jersey, and the importance of efficient freight transportation to its economy.**
- Include land use/transportation issues in professional planning school programs.
- Conduct workshops for public and private officials on best transportation practices.

NEW EMPHASIS:

- Enrich school curricula on transportation -- teach mobility options and transportation's impact on the environment.
- Conduct periodic survey, forum and focus group efforts begun in the **Transportation Choices 2020** program to evaluate progress of the plan.
- Maintain issue groups to help develop and monitor report card.
- Expand public information and marketing about accessible transportation services for the physically challenged.

CONTINUE:

- Encourage school safety programs on how to walk and bike safely.
- Provide adult safety programs to reduce drinking and driving, increase seat belt use and the use of child safety seats.
- Broaden dissemination of schedule, fare and travel information to the public.

Other Studies and Plans

While **Transportation Choices 2020** is the long-range statewide transportation plan, other planning activities are taking place which relate directly to **Transportation Choices 2020**. Close coordination during the development of this umbrella plan has assured compatibility among these different efforts and has captured available information for integration purposes. Exhibit 16 identifies these activities. The appendix to the plan provides a brief description of each of these activities and its status.

EXHIBIT 16

OTHER STUDIES AND PLANS RELATED TO THE STATEWIDE LONG-RANGE TRANSPORTATION PLAN

Other Statewide Plans

1. Urban Supplement
2. NJ TRANSIT Long Range Plan
3. Statewide Bicycle and Pedestrian Master Plan
4. Integrated Transportation Management Strategies Master Plan
5. Statewide Intermodal Strategic Plan - Goods Movement

Management Systems Studies

1. Pavement
2. Bridge
3. Safety
4. Congestion
5. Public Transportation Equipment and Facilities
6. Intermodal - Passenger
7. Intermodal - Goods Movement
8. Traffic Monitoring

Metropolitan Planning Organizations (MPOs) Long-Range Plans

1. North Jersey Transportation Planning Authority (NJTPA)
2. Delaware Valley Regional Planning Commission (DVRPC)
3. South Jersey Transportation Planning Organization (SJTPO)

Other Studies

1. Major System Completion Study
2. Scenic Byways Program
3. Goods Movement Information Database
4. Demographic/Economic Study

CHAPTER 7 - THE FINANCIAL FRAMEWORK

Adequate funding is essential to achieve the **Transportation Choices 2020** plan. The short-term financial framework was provided by the Transportation Trust Fund (TTF) legislation which was signed into law by Governor Whitman on May 30, 1995.

The long-term financial framework must consider the evolving financial requirements to fund New Jersey's transportation program; economic and technological changes which will affect existing revenue sources; and potential future changes in how the transportation program is delivered. In the future we must consider instituting a unified budget for transportation rather than the current separate budgets for operating and capital expenditures. This is particularly important if we plan to solve congestion through labor-intensive corridor management plans, rather than simply by adding additional lanes.

The Transportation Trust Fund: The Short-Term Framework

Background

The New Jersey Transportation Trust Fund was created by the New Jersey Legislature in 1984 to provide a stable, reliable source of funding for NJDOT and NJ TRANSIT's transportation system improvements. The enabling legislation provided four major sources of revenues to the TTF and established "minimum" amounts from each of these sources that were to be credited from the General Fund each year, subject to annual appropriation by the Legislature. Thus, these "minimums," while clearly established by the enabling legislation, were, in practice, only guidelines to the Legislature. The previous TTF debt ceiling was $1.7 billion. All TTF debt was to be retired by July 2006. The debt ceiling would have been reached in Fiscal Year 96 which runs from July 1, 1995 to June 30, 1996. Although the total outstanding debt will be below the statutory maximum after Fiscal Year 96, no additional debt could have been issued because 10-year bonds would mature after the July 2006 expiration of the TTF.

The TTF funded the NJDOT capital program primarily on a "pay-as-you-go" basis until 1991-92. Annual state appropriations funded the bulk of the capital program. In the last several years, NJDOT implemented its largest capital program ever, "New Jersey WORKS!" More than 400 capital projects were advertised -- a program valued at $1.6 billion. This expanded capital program responded to the immediate needs of the state -- to fulfill critical infrastructure needs, to support the New Jersey economy, to create jobs during a period of economic recession, and to take advantage of cyclically low construction prices to implement critically needed transportation infrastructure.

The State Legislature had historically appropriated $331 million to the TTF. Beginning in Fiscal Year 93, however, the level of state appropriation severely declined -- to $155 million in Fiscal Year 93, and $183 million in Fiscal Year 94. Combined with the aggressive capital program, the diminished annual funding resulted in the TTF issuing debt at an accelerated rate. This increasing level of debt lead to an increasing level of annual debt service in the mid and late 1980s in the absence of a change in the maturity of the securities.

Transportation Trust Fund Renewal

The new TTF Legislation (P.L. 1995 C.108) signed by the Governor on May 30, 1995 provides a significant increase in state financial support to transportation relative to Fiscal Year 95. The new law provides an average state-funded transportation program of $700 million per year -- an increase of 24 percent relative to the Fiscal Year 95 TTF appropriation of $565 million. For Fiscal Years 96 through 2000, the state-funded program totals $3.5 billion. Exhibit 17 provides a summary of key points contained in the new TTF legislation.

Most significantly, the legislation allows for a constitutionally dedicated motor fuel tax which gradually increases from the current 2.5 cents per gallon to 9.0 cents per gallon by the year 2000. The schedule for the phased increase is as follows:

- 4.5 cents more in FY97 and FY98, totalling 7.0 cents.
- 1.0 cent more in FY99, to a total of 8.0 cents.
- 1.0 cent more in FY2000, to a total of 9.0 cents.

Other key provisions of the new TTF legislation include an increase in local aid to counties and municipalities from the current $100 million per year to $130 million per year and stabilization of the NJ TRANSIT bus and train fares for the next three years. The new legislation also maintains annual revenues of $24.5 million from the three toll authorities:

- $12 million annually from the New Jersey Turnpike Authority.
- $10 million annually from the New Jersey Highway Authority (Garden State Parkway).
- $2.5 million annually from the South Jersey Transportation Authority (Atlantic City Expressway).

Thirty-million dollars per year will also be realized from using a portion of the revenues derived from vehicle registration fees for heavy trucks. The state-funded portion of the short-range financial plan is intended to secure New Jersey's full share of federal funding -- $800 million per year in Federal Highway Administration and Federal Transit Administration funding, or $4.0 billion over this five year period.

The new TTF legislation contains several provisions to enable the state to more effectively deliver its transportation program:

- Local aid could be disbursed on either a grant basis or on a cost reimbursement basis.
- A fast track procedures is provided to allow unanticipated Federal transportation funds to be utilized without waiting on a further appropriation act from the legislature.
- NJDOT and NJ TRANSIT are allowed to enter into multi-year project funding agreements with legislative approval needed only for projects over $100 million.

EXHIBIT 17

TRANSPORTATION TRUST FUND LEGISLATION
SUMMARY OF KEY POINTS

- CREATES A $700 MILLION PER YEAR STATE-FUNDED TRANSPORTATION TRUST FUND PROGRAM.
- CONSTITUTIONALLY DEDICATES MOTOR FUELS TAXES IN ADDITION TO THE CURRENT 2.5 CENTS.
- PROVIDES OPTION TO DISBURSE LOCAL AID ON EITHER A GRANT BASIS OR COST REIMBURSEMENT BASIS.
- REMOVES TERMINATION DATES FROM TTF LEAVING IT OPEN-ENDED.
- ELIMINATES THE $1.7 BILLION BONDING "CAP" LIMITATION AND ALLOWS BOND MATURITIES OF UP TO 20 YEARS.
- CREATES A FAST TRACK PROCEDURE TO ALLOW UNANTICIPATED FEDERAL TRANSPORTATION FUNDS TO BE UTILIZED WITHOUT WAITING FOR A FURTHER APPROPRIATION ACT FROM THE LEGISLATURE.
- SUBJECT TO ANNUAL LEGISLATIVE APPROVAL, ALLOWS TTF FUNDS TO BE USED TO OFFSET LOSSES IN FEDERAL MASS TRANSIT OPERATING AID ON A DOLLAR-FOR-DOLLAR BASIS.
- SUBJECT TO ANNUAL LEGISLATIVE APPROVAL, ALLOWS TTF FUNDS TO BE USED TO AID AVIATION FACILITIES, THROUGH AIRPORT SAFETY FUND PROGRAM.
- NJDOT AND NJ TRANSIT BOARD WOULD ENTER INTO MULTI-YEAR PROJECT FUNDING AGREEMENTS; LEGISLATIVE COMMITTEE APPROVAL WOULD BE NEEDED FOR PROJECT OVER $100 MILLION.
- NJDOT COULD CONSOLIDATE FUNDS FROM CLOSED OUT PROJECTS AND EXPEND REMAINING FUNDS FOR CAPITAL PROJECT PURPOSES. LEGISLATIVE COMMITTEE APPROVAL WOULD BE NEEDED FOR ACCOUNTS OVER $1 MILLION.
- EXTENDS "FAIR ACT" SURCHARGES AND REDUCES THEIR SIZE BY 50% BY JANUARY 1, 2000; ALLOWS ALLOCATION OF SURCHARGE FUNDS, AS NEEDED, TO THE TTF.
- ALLOWS TTF FUNDS TO BE USED TO OFFSET NJDOT DIRECT AND INDIRECT COSTS INCURRED AS A RESULT OF THE NJDOT TRANSPORTATION PROGRAM.
- SUBJECT TO LEGISLATIVE APPROVAL, ALLOWS NJDOT TO LOAN FEDERAL TRANSPORTATION FUNDS ALLOCATED TO NEW JERSEY FOR UP TO FIVE YEARS TO PUBLIC OR PRIVATE ENTITIES FOR TRANSPORTATION PURPOSES.

NJDOT and NJ TRANSIT Capital Program

The proposed highway and transit capital program for Fiscal Years 1996-2000 contemplates an expenditure of $9.64 billion over the five year period. A typical $1.7 billion yearly program will include the type of investments shown in Exhibit 18. The funding for the program anticipates $5.1 billion in federal funds over the five year time period covered by the short-range transportation program. The renewal of the TTF will provide state funding of $3.5 billion.

The TTF is authorized to fund NJDOT and NJ TRANSIT's capital projects. Until recently, certain NJDOT capital expenditures for replacement and rehabilitation of existing facilities (e.g., bridge deck replacement and rehabilitation) were categorized as maintenance expenditures, to be funded from the operating budget. These types of projects are now categorized by NJDOT as capital expenditures and are funded from the capital budget.

For Fiscal Year 95 appropriations from the TTF totaled $565 million. Exhibit 19 shows appropriations from the TTF for Fiscal Year 95 and the proposed appropriations for the next five years, which relates to the short-range transportation program.

These proposed appropriations represent a significant increase of state financial support across program areas compared to Fiscal Year 95. TTF appropriations for NJDOT/NJ TRANSIT capital projects will increase by $135 million per year. Aid for local projects shows a $20 million per year increase.

EXHIBIT 18

NJDOT AND NJ TRANSIT CAPITAL PROGRAM 1996-2000

TYPICAL $1.7 PROGRAM

CATEGORY	YEARLY	NJDOT - $1085 MILLION
System Preservation	$405	Resurfacing - $62 Million Bridge - $190 Million Highway Rehabilitation - $83 Million Miscellaneous - $70 Million
System Management	$163	Highway Operation Improvements $111 Million Park and Ride/HOV - $13 Million Traffic Management - $27 Million Signs - $12 Million
System Expansion	$125	New Alignments - $47 Million Grade Separations - $29 Million Widenings - $45 Million Corridor Preservation - $4 Million
Local Aid	$130	County Aid - $58.5 Million Municipal Aid - $58.5 Million Discretionary Aid - $13.0 Million
Other	$262	Program Support - $113 Million Environmental - $25 Million Study and Development - $60 Million Other Modes - $24 Million Contingency/Emergency - $40 Million
		NJ TRANSIT - $615 MILLION
Rail Program	$225 Million	Rehabilitation of tracks, bridges, signals, and tunnels; line connections and upgrades; replacement and overhaul of rolling stock; stations and terminals; park/rides and communications
Bus Program	$84 Million	Rolling stock; bus maintenance facilities; signs and shelters; park/rides and terminals
Urban Core	$190 Million	Secaucus Transfer Waterfront Light Rail, engineering for connection to Sports Complex
System Wide	$116 Million	New initiatives; Program Support, Study and Development

EXHIBIT 19

APPROPRIATIONS FROM THE TRANSPORTATION TRUST FUND

(MILLIONS)

Program	FY95	FY96	FY97	FY98	FY99	FY00
Local Aid	$100	$130	$130	$130	$130	$130
NJDOT	$265	$312	$312	$312	$312	$312
NJ TRANSIT	$200	$258	$258	$258	$258	$258
Total	$565	$700	$700	$700	$700	$700

FY = Fiscal Year; FY95 extends from July 1, 1994 to June 30, 1995

Longer-Term Financing

Longer-Term Financial Emphasis

Chapter 6 of this plan identifies actions which are new initiatives, new emphasis on existing activities or a continuation of existing activities. The new initiatives and actions with new emphasis will require a shift in financial resources for implementation. For each of the eight strategies, a discussion of the change in financial emphasis is described.

Strategy A: Support for the Safety, Security and Health of the Transportation User. While in absolute terms this strategy may use a smaller amount than some of the other strategies, it is important that there be a financial investment in implementing its actions. Some of these actions respond to federal mandates, such as the CAA; others serve to enhance the "quality of life" for New Jersey's transportation users. Investment in these activities is appropriate each time their benefits are identified.

Strategy B: Maintain, Repair and Upgrade Infrastructure. A programmed system of maintenance enables the current infrastructure to extend its life cycle. Using most of the state's financial resources on maintaining and repairing its transportation infrastructure is probably the best investment we can make. However, to use these investments more efficiently, we must also focus on upgrading its maintenance methods and management information tools.

Strategy C: Maximize Service Provided by Current Transportation Infrastructure. This strategy contains many actions -- some cost very little, some are very expensive, and some do not necessarily require additional capital investments. However, investing in clearly defined opportunities to enhance system performance should routinely be rewarded and funded, even at the expense of some competing investment.

Strategy D: Provide for Strategic System and Service Expansion. Investments in any type of system expansion will require considerable sums of money. When implementing this strategy, the transit mode will receive priority over highways. However, expansion, regardless of mode, must be carefully evaluated to demonstrate economic or other payback for the high cost involved.

Strategy E: Exploit Technology. Transportation must take advantage of the opportunities provided by innovative technologies. The public sector can benefit from partnerships with the private sector's investments in research, design and development of technology. While the costs of technology may be significant, such partnerships can temper costs by pooling public and private resources.

Strategy F: Improve Management Practices. This strategy does not require any significant amount of new financial investment to implement; it does require a commitment to change procedures and processes. Some of these changes, if implemented, could reduce present operating expenses, such as the redesign of procurement processes to encourage competition in service delivery, and foster formulation of partnerships. Improvements in these practices will also allow better use of current staff.

Strategy G: Form Partnerships with Local Communities, Businesses and Agencies. If implemented efficiently, this strategy may decrease costs. While a limited amount of funds should be made available both for staff purposes and for financial aid or incentives for local governments, a major allocation of financial resources is not necessary for partnering with local communities and agencies. Partnering also means being more responsive to the private sector. Partnering requires the creation of "win-win" opportunities.

Strategy H: Educate and Communicate. This strategy is an important element in future transportation programs, and one which has not been emphasized in present-day transportation efforts. To implement the actions for this strategy, a limited amount of additional funds is needed for both personnel and communication aids.

Revenue Options for **Transportation Choices 2020**

The current revenue mix for transportation funding consists mainly of bond funds, the gas tax, toll funds and general fund appropriations. The current short-range financial program depends on an increase in bond funds and the money dedicated from the state's motor vehicle tax to expand its revenues. This mix will have to be re-examined in later years for its viability, revenue yield, stability, and growth potential. The longer-term financial framework refrains from outlining specific revenue-raising proposals and rates. The plan suggests a variety of revenue-raising opportunities, and leaves the selection of methods for future consideration. The ability to garner public support for new or expanded revenues is linked to the delivery of high-quality service which meets the user's needs. Therefore, demonstration of this delivery will occur over time, and can open the door to changes in revenue sources and amounts in the future.

The state's present reliance on the gas tax, which is considered by some to be regressive and inelastic, is not consistent with many of the strategies embraced in **Transportation Choices 2020**. With the continual improvements in gasoline engines for more efficiencies and with a move towards different fuels, such as electricity and natural gas, the state's income from the gas tax may begin to decline. When linked to improved services, the gas tax is one of the easiest taxes to impose. It is publicly acceptable, especially when it is dedicated for transportation purposes. It is easy to collect, and it has the potential to yield large sums of money. However, it is also perceived as an inequitable tax, since the burden falls on everyone

equally, regardless of ability to pay. The tax could have a limited growth potential because of today's emphasis on more efficient vehicle engines.

Looking beyond the year 2000, the plan will need more resources for maintenance and strategic system expansion. Given the restrictive characteristics of the current transportation revenue raisers, new revenue sources should be explored. The degree to which future revenue contributions to transportation are provided by the leveraging of bond funds will affect the need for additional funding.

Transportation funding alternatives in the future must be evaluated according to four primary considerations:

Financial - How much revenue will it raise? What is the growth potential? How does it respond to inflation?

Political - What will be the degree of public acceptance? Is it equitable? What are the incentives? How does it compare to similar taxes in neighboring or similar states?

Legal - Are legal mechanisms in place now? Is new legislation needed?

Ease of Collection - Can it be collected under current procedures? Is the collection procedure complicated? Can monitoring and auditing be accomplished easily?

The state sales tax on motor fuels takes advantage of the public's readiness to accept taxes on motor fuels dedicated to transportation. A motor vehicle surcharge fee dedicates a value-based fee for transportation purposes, and brings a more direct relationship between the revenue source and its use. A Vehicle-Miles-Traveled, or VMT, fee was considered difficult to administer and monitor until the advent of technological advances, such as Smart-Cards. It can be used as a pricing strategy to achieve desirable transportation goals such as clean air requirements and congestion reduction. The other advantage of this kind of tax is its direct relationship to road "wear and tear."

The **Transportation Choices 2020** process examined other revenue raisers for transportation purposes. Many of these options have disadvantages that would discourage them from being used as a major source of income for a state transportation system. However, several could be considered as supplementary to the main effort, more for their policy implications than for their revenue possibilities. These options could include a Weight Distance tax on trucks, which would match the burden to pavement damage and design requirements and privatization opportunities, which would allow private companies to build toll roads. Many options have limited revenue yields and because of their tenuous connection to transportation purposes might not be easily accepted by public. Ultimately, future selection of revenue raisers would require prior

delivery of quality services and a clear linkage between any potential new revenue tools and the nature of the new or expanded service it would support.

In this approach to market-based pricing, the true costs for transportation are charged to the consumer. This includes paying for social and environmental costs that the transportation service imposes. Examples that should be considered include increasing taxes on fossil fuels, waste generation, and environmentally destructive activities; more emphasis on regional decision-making for transportation investments; and regional funding mechanisms.

CHAPTER 8 - IMPLEMENTING THE PLAN

If we are to realize a better New Jersey in 2020, we must begin to work now to improve and expand the transportation choices available to New Jersey's travelers. The plan must begin to **"live"** now and continue into the future. Some of the plan's actions can be put into place relatively quickly, with immediate impacts. Many actions will require time. Still others will begin a process that will take time before their value is apparent. Some, however, can be begun immediately to produce a near-term benefit, and act as a stepping stone to the future. Each near-term action, designated a **"showcase action,"** is drawn from one of the overall set of strategies recommended in the plan. Together, they represent a pro-active program to fundamentally change the way New Jersey delivers transportation services and conducts transportation business. Showcase action steps can be scheduled in a year-to-year time frame, or can be launched and completed within five years.

NJDOT is developing a short-term action agenda called a "Blueprint for Transportation" which maps out the primary transportation issues. The agenda is stipulated by actions which are consistent with those included in this plan. All strategies presented in this plan fall within the "BLUEPRINT."

Showcase Actions

The specific showcase actions, with the relevant steps for implementation, follow.

CASH FOR CLUNKERS

This is a program designed to provide cash to owners for the purchase of their older, high-polluting vehicles. The program would be voluntary and those who could not afford to replace older vehicles would not be required to participate. It is an interim solution toward longer-term air quality strategies. The vehicles are removed and ultimately scrapped. This action lends itself to the impending merger between the Department of Transportation and the Division of Motor Vehicles. The steps required for implementation are:

Steps	Lead	Support
1. Evaluate Other Experiences	NJDOT	
2. Develop Proposal (Eligibility, Price, Funds, etc.)	NJDOT	Private Sector
3. Propose Legislation	NJDOT	
4. Enact Enabling Legislation	Legislature	NJDOT
5. Implement/Administer Program	Private Sector/NJDOT	

Time Frame:

Work currently underway; program could be operable in 12 months.

CONSUMER RESPONSE PROGRAM

This program is designed to provide a single point of contact for reporting all highway and transit system failures or deficiencies such as lights and signal outages, potholes, sign deficiencies, and other system failures. It offers the public more responsive service and satisfaction. It is also a gauge for management to understand the magnitude and nature of customer concerns and to track agency responses to them.

Steps	Lead	Support
1. Establish an Administration Process (Staffing, Reporting, etc.)	NJDOT/NJ TRANSIT	
2. Develop Program	NJDOT/NJ TRANSIT	Local Government/Authorities
3. Purchase Required Equipment, etc.	NJDOT/NJ TRANSIT	
4. Implement the Program	NJDOT/NJ TRANSIT	

Time Frame:

Start in July 1995; complete in 12 months, July 1996.

INCIDENT RESPONSE TEAMS

Incident management teams include people from local and state police, FHWA, NJDEP, NJ TRANSIT, NJDOT, fire and rescue squads, environmental response teams, towing services, etc. The team develops a preset plan of notification and action for a given roadway segment in the event of an incident, accident, or disaster (as is being done for the US 1 and I-95 corridors). This is important because for every hour of accident clearance, an additional 3 hours of delay results.

Steps	Lead	Support
1. Establish Response Teams for Each Corridor (or Roadway)	NJDOT/State Police	FHWA, Local and County Governments, Fire, Rescue, Towing, NJDEP, NJ TRANSIT, Private Sector
2. Develop an Incident Response plan (Decide on Components, Jurisdictional Issues, Costs, etc.)	Team	
3. Distribute the plan	NJDOT	

Time Frame:

Start in May 1995; complete in 12 months, May 1996.

MARKET-BASED CONGESTION PRICING

Market-based pricing is a program designed to be beneficial in managing congestion. The opportune time to apply such a strategy is during a toll increase. The toll increase, for example, might be applied only to peak travel periods. To ease implementation, toll congestion pricing must be revenue neutral. (i.e., no net gain in revenues - higher tolls during peak travel periods, lower tolls outside of peak travel periods).

Steps	Lead	Support
1. Identify Demonstration Opportunities (River Crossings)	NJDOT	Authorities
2. Determine Market Price that Effects a Modal Shift	NJDOT/Authorities	NJ TRANSIT
3. Determine Capacity to Manage Modal Shift	NJDOT/Authorities	NJ TRANSIT
4. Define the Package: Increase Differential	NJDOT/Authorities	
5. Public/Marketing	NJDOT/Authorities	
6. Implement	Authorities	
7. Evaluate	NJDOT/Authorities	

Time Frame:

Implementation over a 3 to 5-year period because of institutional issues; implementation must take place at the time of toll increase.

PRIORITY TO KEY FREIGHT ACCESS ROUTES

This action focuses on finding remedies to critical constraints to moving goods within, through, and from the state. Efficient goods movement will undoubtedly increase New Jersey's advantages for the location of economic activity and jobs. This action supports the Economic Master Plan and the Statewide Intermodal Strategic Plan - Goods Movement and fosters business compatibility.

Steps	Lead	Support
1. Convene the Freight Committee	NJDOT	Freight Community
2. Update Truck Route Priority Map	NJDOT	Freight Community
3. Identify Impediments	NJDOT	Freight Community
4. Set Project Priorities and Implement	NJDOT/Authorities	Freight Community

Time Frame:

Start July 1, 1995; complete recommendations by July 1, 1996; implementation as necessary.

ELECTRONIC COLLECTION OF TRANSPORTATION CHARGES - HIGHWAY TOLLS

Electronic toll collection is about to be put in place through coordinated arrangements between the major toll agencies in New Jersey and other nearby states. With this technology, a device is affixed to the vehicle and read while the vehicle proceeds without stopping through a toll plaza. Electronic toll collection at toll facilities in the state will speed collection and provide the convenience of pre-paid billing. In addition to reducing collection costs and providing creative pricing opportunities, electronic collection is a first step toward a "smart transportation" card. A key issue is whether the convenience and time savings of pre-paid media will be attractive enough to the customer to justify its installation, without offering discounts that will reduce revenues.

Steps	Lead	Support
1. Build on Work by ETTM Committee to Reach Final Decision on Technology	NJDOT	All Authorities
2. Implement Program	All	
3. Move Toward "Smart Card" Integration	NJDOT/NJ TRANSIT & AUTHORITIES	

Time Frame:

Start - ongoing but accelerate full ETTM (Electronic Toll and Traffic Management) - within 3 years.

ELECTRONIC COLLECTION OF TRANSPORTATION CHARGES - TRANSIT FARES

This action will allow for the electronic collection of transit fares for NJ TRANSIT and other transit operators in the region. As it progresses, it could also include charges for parking, highway tolls, and the like as it moves toward the "smart transportation" card concept.

Steps	Lead	Support
1. Convene Task Force Among Transit Agencies	NJ TRANSIT/NJDOT	SEPTA/MTA PATCO/PATH
2. Evaluate Expenses and Establish Parameters	Task Force	SEPTA/MTA PATCO/PATH
3. Identify Roles	Task Force	SEPTA/MTA PATCO/PATH
4. Negotiate Agreements	NJ TRANSIT	SEPTA/MTA PATCO/PATH
5. Implement	NJ TRANSIT	SEPTA/MTA PATCO/PATH
6. Evaluate Highway/Transit Merge	NJDOT/NJ TRANSIT	All Authorities

Time Frame:

Implementation in 3 to 5 years because of institutional issues.

STATEWIDE STOLEN CAR RECOVERY PROGRAM

Through the DMV vehicle registration process, the State of New Jersey could provide a Stolen Car Recovery Program. When a vehicle is registered, the owner could select this option and an electronic signal device would be installed (hidden) in the vehicle. If the car is stolen, the signaling device would be activated by the owner and the police would track and recover the vehicle. Since the state would buy in large quantities, the service would be provided at a reduced rate. This is a car theft deterrent.

Steps	Lead	Support
1. Establish a Stolen Car Recovery Program as Vehicle Registration Option	NJDOT	NJ State Police
2. Define and Provide a Program for Monitoring and Vehicle Retrieval	NJ State Police	NJDOT, All Police Agencies in NJ
3. Administer the Program	NJDOT	NJ State Police

Time Frame:

Begin work after July 1, 1995; could be completed and program established in 18 months.

DMV TRANSACTIONS VIA ELECTRONIC MEDIA

Driver licenses, vehicle registrations, record retrieval and other DMV transactions could be done over a personal computer or at a public kiosk, using a credit card for payment. This could be done from home, office, or a remote kiosk. There is no need to travel (reduces traffic) and no need for the customer to stand in lines and wait at DMV offices.

Steps	Lead	Support
1. Establish an Electronic Media Service for Motor Vehicle Transactions	NJDOT	NJ Treasury, NJ State Police
2. Purchase and Install Equipment	NJDOT	NJ Treasury
3. Provide for Financial Administration	NJDOT	
4. Market to the Public	NJDOT	
5. Implement the Program	NJDOT	

Time Frame:

Begin after July 1, 1995; complete in 24 months, July 1997.

COMMUNITY AWARD

The Governor will bestow an annual award to the New Jersey community that best makes land use decisions that support the transportation system or links transportation to community design solutions. This will emphasize that the State attaches importance to making the land use/transportation connection, and that the key to future mobility in New Jersey is through local initiatives.

Steps	Lead	Support
1. Establish a Panel	NJDOT	
2. Determine Basis/Criteria of Award; Define Award	Panel	NJDOT/Others
3. Establish Award; Process and Implement	Panel/NJDOT	

Time Frame:

Start in May 1995; first award, November 1995 at League of Municipalities Conference.

CORRIDOR AND AREA MANAGEMENT PARTNERSHIPS

Corridor Management Partnerships could be established to design transportation facilities and services in a corridor. This would require local communities to pull together with NJDOT, NJ TRANSIT and others to establish a comprehensive process to deal with corridor congestion. Since land use and transportation impact each other, it is necessary to coordinate the planning of both. This action would provide the ability for "buy in" at all levels of government and community.

Steps	Lead	Support
1. Identify Stakeholders at Local, County and MPO Levels	NJDOT	Local, Counties, MPOs
2. Establish a Partnership	NJDOT/Stakeholders	Federal
3. Identify Problems (Inclusive of Land Use Patterns)	Partnership	
4. Review Options, Set Priorities and Implement	Partnership	

Time Frame:

Start in June 1995; continuous activity.

COMMUNITY RESOURCE

This action will require NJDOT and NJ TRANSIT to take a more active role in providing communities with technical assistance to develop local transportation policies that support transportation activities on two levels. NJDOT and NJ TRANSIT can advocate and help communities formulate a Circulation Element for municipal master plans. They can also provide technical information to formulate transit - and pedestrian-friendly zoning, shared parking, pedestrian and bicycle circulation plans, highway access management methods, reduced parking requirements, and parking management strategies.

Steps	Lead	Support
1. Define NJDOT Mission in the Local Arena	NJDOT/NJ TRANSIT	OSP/LOM/NJCPA, etc.
2. Determine Staffing Needs and Options	NJDOT/NJ TRANSIT	OSP/TMA/MPO
3. Define Tools/Service	NJDOT/NJ TRANSIT	OSP/LOM/NJCPA
4. Announce; Market; Solicit; and Implement	NJDOT/NJ TRANSIT	OSP

Time Frame:

Start - May 1995; announce in November 1995 at the Annual League of Municipalities Conference.

GOODS MOVEMENT EDUCATION CAMPAIGN

This program will initiate a public education program to inform the public of the importance of goods movement to the state's economy. An effective public education campaign will create an awareness and, above all, strengthen public or community support for freight-related transportation actions. This action builds support for initiatives for global competition.

Steps	Lead	Support
1. Develop Campaign; Hire Consultant	NJDOT	Industry
2. Implement Program	DOT/Various	Industry, Other State Departments
3. Evaluate Impact	DOT	All Participants

Time Frame:

Start July 1, 1995; completely defined program ready for implementation July 1, 1996.

Report Card Implementation

Creating both operational and strategic report cards requires close coordination among transportation providers, including private operators in some areas. Development of operational and strategic report cards have the following steps in common:

- review plan goals and objectives to select areas for potential evaluation;

- consider alternative performance measures from several perspectives -- data availability (now and in the future), type (input, output, and outcome), meaning to public; and

- select performance measure, including interim, surrogate, permanent or final measure.

Strategic and operational report cards, however, differ in the following aspects:

Strategic:	Operational:
statewide, multi-agency	*agency-specific*
gradual, incremental change	*cyclical performance; short-term change*
customer evaluation	*technical/professional evaluation targets*
progress assessments	*evaluation targets*
cross-institutional acceptance	*internal management acceptance*

NJDOT and NJ TRANSIT must assume lead roles in formulating the strategic report card and in advocating operational report cards at all public and private transportation providers. Agency business plans provide an excellent opportunity to establish and refine operational performance report cards, to use the results to redefine short-term targets, and goals and to adjust operations accordingly.

Consensus-building around strategic report cards will be needed for all agencies to work together toward the common goals set forth in this plan. NJDOT will take the lead in this effort.

Moving Towards 2020

By starting to work now on the Showcase Actions, we can deliver near-term benefits to New Jersey's travelers. As we benefit from these actions, the plan begins to "live." Once these initial actions are in place, the report card process can measure the success or failure of these actions, giving a good indication of the level of success achieved and areas for improvement. Through information provided on the report cards, and from internal discussions among NJDOT and NJ TRANSIT management and staff, our future program can be adjusted to capture the most desirable improvements and make necessary fine tuning to the present program through the annual business planning process. Working together with the transportation providers, communities, businesses and other stakeholders in New Jersey, we can create new opportunities to realize our vision for **Transportation Choices 2020.**

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APPENDIX A

2020 PUBLIC FORUMS SUMMARY REPORT

INTRODUCTION

The New Jersey Department of Transportation (NJDOT) conducted a series of public forums on April 18, 19, and 20, 1995 to present its draft Statewide Long-Range Transportation Plan, *Transportation Choices 2020.* Afternoon and evening sessions were held in Newark (Tuesday, April 18th), New Brunswick (Wednesday, April 19th), and Cherry Hill (Thursday, April 20th). Each session included a slide presentation by William Beetle, Director - Transportation Systems Planning, NJDOT and a discussion period. NJDOT staff was also available prior to each session to review project exhibits and documents on a one-on-one basis.

Mr. Beetle's presentation summarized the process followed to develop the Long-Range Plan, including its technical and public involvement components; highlighted the transportation system's trends, challenges, and opportunities; reviewed the vision statement and goals and objectives developed for the Plan; and detailed the Plan's proposed strategies and actions (including short-term showcase actions), the report card for measuring performance, and financial issues. A total of 114 persons attended the six sessions. All attendees received a handout packet, an Executive Summary of the draft Plan, and a comment sheet. In advance of the forums, flyers were distributed to approximately 5700 persons on the project mailing list, and copies of the draft Plan were placed in 24 libraries throughout the State for public review. A press release was also distributed to local and statewide newspapers.

A total of 43 persons spoke at the forums. In addition, comment sheets and other written materials were submitted by six persons at the forums and by 14 people via the mail (see Attachment A). Those participating in the forums represented a wide cross-section of constituents, including representatives of government, business and labor; members of civic organizations and special interest groups; and residents. Many attendees praised the project team for the development of a thoughtful Plan, an informative and comprehensive presentation, and a thorough and responsive public participation process.

Although comments covered a wide range of topics, several issues emerged as being of particular importance to attendees. These are summarized, by category, below. All comments are cross-referenced, by number, to the listing of "Oral & Written Comments" (see Attachment A).

1. Mass Transit

   Many speakers underscored the need for increased access to mass transit, specifically through improved routing and expansion of bus and rail service. The need for service expansion was a particular concern of attendees residing in Southern New Jersey, who emphasized the inadequacy of mass transit service in their area. In general, persons were in favor of dedicating funds to transit expansion over highway expansion.

   - Recommendation that Plan should emphasize the need for improved and expanded rail systems (4, 5, 30,)
     - Expand rail for effective and energy efficient passenger and goods movement (4)
     - Expand Newark City Subway System rather than build the Newark- Elizabeth Rail Link (5)
     - Need for direct rail routes (30)
   - Recommendation that bus routing be improved and expanded to accurately reflect where people live and recreate (2)
   - Request for improved management of mass transit system (1, 11)
     - Criticism of unnecessary projects and waste in mass transit system (1) [See also "Financial"]
   - Recommendation for coordinated fares between NJ TRANSIT and SEPTA (23) [See also "Intermodal Linkages" and "Partnerships"]
   - Request for mass transit connection between Rutgers University's campuses (21)

- Strong support for increased public transportation access to, from, and within South Jersey (23, 27, 29, 42, 43)
  - Need for express bus service (23)
  - Support for expanded rail service and utilization of existing abandoned rail tracks (4, 29, 42)
- Strong support for coordination of transit services (NJ TRANSIT, SEPTA, LIRR, Metro-North, PATCO) (4, 11, 14, 43, 48)
- Recommendation for creation of state run ferry service between the Highlands and Newark Airport, to serve Perth Amboy and Keyport (2)
- Support for the consideration of monorails (1, 51)
- Opposition to advocacy of the use of buses. (Comment that although advantages and benefits exist, built in limitations will strangle the rail system.) (30)
- Recommendation for creation of new light rail lines and modifications to existing rail lines in Bergen County (47)
- Recommendation to develop two proposals to complete "missing links" in the highway and subway system (58)
- Recommendation to expand PATCO and establish a mini-van shuttle service between PATCO stations, major neighborhood hubs, and other civic and commercial centers in Cherry Hill (62)
- Recommendation to give more attention to taxis, limousines, jitneys, special paratransit, school buses, etc, as other elements of the commercial passenger transportation industry in the State (60)
- The Urban Core project should be explained, along with its complete costs and benefits. (53)

2. Highways

Speakers expressed divergent opinions on many aspects of highway planning and operations, including funding and use of High Occupancy Vehicle (HOV) lanes. With one exception, there was however general agreement on the need to maintain the existing highway system's infrastructure. Although many speakers acknowledged that the state's population is extremely dependent on automobile use, there was no agreement on how to address this issue.

- Strong support for continued maintenance of infrastructure (5, 8, 9, 56)
- Recommendation to repave, instead of just patching, any road that is torn up for utility work (55)
- Support for use of HOV lanes (3, 45) [See also "Congestion Management and Pricing"]
- Criticism of HOV lanes as not being beneficial to business owners/truckers (1)
- Concern that too much of budget is spent on maintenance of highways and bridge repair (6)
- Support for development and utilization of IVHS/ITS (8) [See also "Emerging Technologies"]
- Recommendation that highways be given greater emphasis in the Plan (8)
- Recommendation that privatization of roads be considered (5)
- Recommendation that NJDOT develop a map of missing links in order to more effectively address weaknesses in the highway system (40, 41)
- How will NJDOT decide the proper conditions for expanding highways as opposed to alternative transportation improvements? The plan states that highway improvements that serve existing centers, support tourism, or improve goods movement might be desirable. Or projects that include widening and bypasses that are the "only realistic solution" or "integral to significant growth" might be desirable. Almost any highway expansion could fit these measures. In fact, has NJDOT ever undertaken a highway expansion project that did not meet these criteria. This loophole in the plan should be closed. (53)
- How will NJDOT establish the list of missing link projects that will be advanced? Will local communities be included in the process, and will their request be honored? (53)
- The plan should define the causes of the increased congestion over the past 30 years so that viable solutions can be found. Causes could include increased development in the suburbs, increased auto ownership, increased population and jobs. The plan should clearly state this. Also, which CMS strategies will be included in future actions. (53)
- Highways should be designed to limit speeds (53).

3. Bicycles

The importance of encouraging bicycle use as a transportation mode and more effectively integrating bicycle use into the mass transit system was emphasized by several speakers.

- Recommendation that increased use of bicycles be encouraged (22, 40, 46)
- Support for expansion of bicycle linkages with mass transit (15, 22, 40, 46) [See also "Intermodal Linkages"]
  - Need to accommodate bicycles on mass transit vehicles and at stations (15, 22, 40, 46)
- Support for converting abandoned rail tracks to bicycle trails [*Rails to Trails*] (18)
- Support for bicycle-friendly roadways (18)
- Recommendation to improve bridge access for bicycles (55)

4. Intermodal Linkages

Although each respondent emphasized different modal links, there was general support for encouraging modal linkages wherever possible in an effort to ensure that trips are seamless and efficient. Several persons emphasized the need to develop and maintain infrastructure in order to create multimodal corridors both presently and in the future.

- Recommendation that transportation planners follow example of Benjamin Franklin Bridge designers to develop infrastructure suitable for intermodal use. (32)
- Concern that intermodal freight movement be maintained in the Newark-Elizabeth Rail Link corridor (Unidentified)
- Support for improving air/rail links (3, 18, 22)
  - recommendation that Newark monorail system be expanded to serve other major population centers
- Support for improving rail/bus coordination (14)
- Support for improving rail/rail links (3)
  - recommendation that NJ TRANSIT interconnect with MTA, LIRR, and SEPTA (4, 11, 48) [See also "Partnerships"]
- Support for infrastructure maintenance to facilitate better linkages (9)
- Support for expansion and improvement of bus service linkages (18) [See also "Mass Transit"]

5. Partnerships

Several persons emphasized the key role of regional planning in developing an improved transportation system and stressed the importance of partnerships between public and private entities and within the public sector. The need to link transportation and land-use planning decisions through partnering also emerged as a critical issue. Comments were received for and against the privatization of mass transit.

- Concern that home rule is an obstacle to statewide transportation planning; emphasis on need to build partnerships between NJDOT and communities and local officials in order to link land-use development and transportation planning. (11, 35, 39)
- Recommendation that business/community partnerships be established through the Transportation Management Associations. (36, 52)
- Strong support for comprehensive, regional planning (3, 4, 11, 12)
- Support for keeping NJ TRANSIT a publicly run system (4, 48)
- Support for privatization of the transit and roadway systems (5, 16, 36) [See also "Highways"]
  - Need for method to defray liability costs in order to encourage private mass transit (36)
- Support for increased communication and coordination of services between NJ TRANSIT, Metro-North, LIRR, and SEPTA (11, 14) [See also "Intermodal Linkages"]
- Recommendation to include PATCO in the seamless transportation network (43)
- Support for encouraging partnerships between businesses and transit to promote the use of mass transit (14)
- Support for expanded role for MPOs in transportation planning (13)

- Support for a regional rail station in South Brunswick Area (18) [See also "Intermodal Linkages"]
- Statement that the Long-Range Plan is consistent with DVRPC's regional planning efforts (31)
- Support for NJDOT operating, managing, and maintaining the transportation systems in partnership with county, local and private businesses (61)
- NJDOT should establish local area transportation partnerships with local civic associations and businesses. (53)

6. Financial

Transportation financing was discussed in terms of revenue collection, subsidies, and resource allocation. A number of persons expressed the position that transportation funding should be expanded, either to reduce the burdens of localities or to enhance the system. Several persons commented that NJ TRANSIT does not receive adequate subsidies.

- Support for increased subsidies to NJ TRANSIT in order to make up revenues not recovered through fares. (32)
- Recommendation that NJT and NJDOT subsidize newer, less financially solvent routes with more financially solvent ones. (54)
- Recommendation for public education on degree to which automobile is subsidized, as compared to other modes of transportation (4, 14, 30, 32, 35) [See also "Education and Communications"]
- Recommendation for examination of real costs and subsidies associated with different modes of transportation (4, 11, 13, 14) [See also "Education and Communications"]
- Concern about sources of additional funding beyond the Transportation Trust Fund (Unidentified, 16)
- Support for allocation of gas tax revenues exclusively to transportation in order to eliminate the need for an increase in the gas tax (1, 6, 45)
- Recommendation that the gas tax be increased in order to reduce localities' contributions to transportation funding (3)
- Recommendation to better utilize gas taxes (52)
- Opposition to use of gas tax revenues to subsidize State's General Fund (1)
- Expression of need for expansion of local aid program to integrate urban networks into the state system (13, 44)
- Recommendation that local roads not used by the general public should not be funded by NJDOT (1)
- Criticism of mismanagement and unnecessary spending in the transportation system (1, 3) [See also "Mass Transit"]
- Statement that funding is driven by policy issues and public perceptions (17)
- Recommendation to re-focus financial management to look at the cost aspect of providing transportation services (60)
- The plan should clearly state the price tag for its recommendations, the sources for paying for it, and the exact transportation improvements that will result. (53)
- Did NJDOT use zero based budgeting to develop the draft budget? (53)

7. Needs of the Disabled and Handicapped Mobility

A number of comments were received that underscored the need for a transit system that is more responsive to the requirements of disabled passengers through service expansion, improved customer relations, and more flexible operational practices.

- Specific recommendations to enable NJ TRANSIT to more adequately meet the transportation needs of the disabled included the following:
  - Need to amend policy requiring the assistance of an attendant on specific modes of transport (25)
  - Need for expanded Access Link service (26)
  - Need for greater sensitivity and understanding by Access Link staff in order to meet the needs of disabled riders (25, 26)

- Need for more accurate information regarding Access Link fares and schedules (25, 26)
- Request that Access Link Card billing process be done monthly instead of on every trip (25)

8. Congestion Management and Pricing

Suggestions for reducing congestion reflected a diversity of ideas. Several persons cited the crucial role of employers in encouraging more efficient transportation choices. HOV lanes, carpooling, and subsidies were among the possible congestion pricing measures noted by speakers.

- Recommendation to revise criteria for assessing the success of Employer Trip Reduction plans by setting up a point system to measure their effectiveness (39)
- Support for discouraging automobile use through congestion pricing (11, 35)
  - suggestion to increase fuel tax (35)
- Support for employers' participation in congestion management programs
  - concern that employers give greater subsidies to auto users than to transit users (14)
  - need for incentives to encourage employee carpooling and bicycling (18)
- Recommendation that greatest subsidies be provided to modes of transportation that afford the greatest return with the least amount of energy consumption (4) [See also "Financial"]
- Support for exploring alternative ways to relieve congestion (i.e., telecommuting, 4-day work week, bicycling) (21)
- Support for use of HOV lanes
  - for market-based pricing (i.e., on George Washington Bridge) (3)
  - to encourage carpooling (45)
- Congestion pricing can reduce peak traffic by up to 30%. The plan deals with this issue very timidly and should recommend parking charges or taxes. (53)

9. Emerging Technologies

Several persons commented on the significant future role of technology in developing an efficient transportation system. Some persons specifically noted the possible benefits in terms of the environment and intermodal linkage.

- Support for development and use of IVHS/ITS (8) [See also "Highways"]
- Support for use of alternative fuels in public transit (19)
- Recommendation to utilize existing technology to promote connectivity between different modes of transportation (11) [See also "Intermodal Linkages"]
- Support for use of monorails (51)
- Concern that emphasis on high-tech solutions (i.e., monorails) discourages effective use of currently available technologies, such as buses, trolleys, electric cars (14)
- Recommendation to not devote any resources to testing of the Inset Fuel Stabilizer (63)

10. Education and Communications

A number of speakers emphasized the need for public awareness and education concerning transportation choices. Several persons voiced their belief that travel behavior could be changed by educating the public on the impacts of automobile use and the benefits of mass transit. In addition, improved marketing of the transit system and better travel information services were seen as ways to encourage the use of mass transit.

- Support for enhanced and increased marketing and education regarding the transportation system (11, 13, 14, 28)
  - Need for education of public on the environmental impacts of driving (11)
  - Need for education of public on the benefits of mass transit, including the improvement of conditions for those who must drive (14) [See also "Congestion Management and Pricing"]
  - Need for education of public on the degree to which automobile use is subsidized, as compared to transit use (4, 14, 30, 32, 35) [See also "Financial"]

- Need for education of public to understand the trade-offs required to improve the transportation system (17)

- Recommendation for improved dissemination of schedule, fare, and travel information to the public (11, 13, 14, 28)
- Recommendation that local elected officials be educated regarding the effects of land use development on transportation planning (34) [See also "Partnerships"]

11. Showcase Actions

- Recommendation that Cash for Clunkers program should assess impacts to lower and fixed income citizens (44)
- Concern that lower income groups will be disproportionately impacted by the Cash for Clunkers showcase action (13)
- Expand the Community Resource action to include 1) the Circulation element of municipal master plans and 2) parking management in the description of the action. Classify these items under Strategy G, Partnerships, and Strategy H, Educate & Communicate. (57)
- Support for the Community Award and Corridor and Corridor and Area Management Partnerships (57)

12. Miscellaneous

- Concern that Plan's goals are too general (24)
- Recommendation that Plan include specific benchmarks for measuring the degree to which Goals are being met (7)
- Concern about the impact of existing constraints and environmental considerations on the implementation of Strategy B - Maintain, Repair, and Upgrade Infrastructure (13)
- Criticism of patronage jobs in the transportation system (1)
- Recommendation that bulk transit for commodities be utilized to reduce pollution (33)
- Recommendation that the "Report Card Implementation" include more customer/public involvement (57)
- Recommendation that general aviation costs should be completely privatized and self-funded (53)
- Recommendation that the plan should aggressively pursue the use of transportation investments to support the State Development and Redevelopment Plan (53)
- Recommendation that the plan's statement that transporting goods through NJ is an important goal should be reconsidered in light of its effect on the state's environment and quality of life. Also, the goods movement policies should be focussed on moving goods within the state. (53)
- Recommendation to look at the effect of trucks on urban roads (13)

A significant number of specific requests and concerns relating to NJ TRANSIT, the draft Plan, and NJDOT's capital and operating programs were also received. These are documented in a separate listing (see Attachment B).

ATTACHMENT A

Oral & Written Comments

Speakers at the 2020 Public Forums:

April 18th
4:00-6:00 pm

1. Vincent J. Frantantoni, President, Concerned Citizens of Belleville
2. Muriel McFaul, NJTO, Middletown Seniors
3. Albert F. Cafiero, Transit Committee of Bergen County
4. William R. Wright, Director, New Jersey Association of Rail Passengers
5. Bruce Haim, Citizens for Sensible Transportation
6. Nick Ayoub, Steinman, Boynton, Granquist & Birdsall
7. Janine Bauer, Tri-State Transportation Campaign
8. Noël Jablonski, A.I. & Associates, Inc.
9. John Meagher, National Association of Retired Persons

7:00-9:00 pm

10. Ed Lipiner, Passaic County Planning
11. Nicolas Clifford, Bicycle Tour Operator, Blue Marble Travel
12. Paul Eng-Wong, Eng-Wong, Taub & Associates

April 19th

4:00-6:00 pm

13. William T. Love, Jersey City Engineer
14. Andi Weiss Bartczak, New Brunswick, NJ
15. Helene R. Molter, Coalition of NJ Cyclists, Inc.
16. Anthony Gambilonghi, Middlesex County Planning
17. Vivian L. Beetle, Hoffman-LaRoche

7:00-9:00 pm

18. Dan Rappoport, Princeton Bicycle Pedestrian Committee
19. John Donnelly, New Jersey Department of Transportation
20. Susan Winter, Greater Mercer Transportation Management Association
21. Bruce McCracken, Middlesex County Planning Board
22. Charles Henry, New York Metropolitan Transportation Council

April 20th

4:00-6:00 pm:

23. Douglas Dielh, Springfield, PA
24. Peter Fatula, Voorhees, NJ
25. Robert Fesel, Disabilities Resource Center
26. Jill Kerner, Disabilities Resource Center
27. Fred Martin, Jr., Camden, NJ
28. Therese Donlau, Gloucester County, NJ
29. Ginny Weber, IRATE
30. Scott Maits, Visiontation, Inc.
31. Don Shanis, Delaware Valley Regional Planning Council
32. Unidentified
33. Edmund J. Cresp, South Harreson Township
34. Jeffrey Vernick, Parsons Brinckerhoff
35. Ridgely D. Ware, Delaware Valley Regional Planning Council, Burlington Count Representative
36. Eli Cooper, Cross County Connection, TMA
37. Chet Ambler, South Jersey Transportation Planning Organization

7:00-9:00 pm

38. Bob Shinn, Cherry Hill, NJ
39. Linda Krsnak, Cumberland County Planning Department
40. Bill Roser, Coalition of New Jersey Cyclists
41. Roxane Shinn, Cherry Hill, NJ
42. Richard Kennedy, Cherry Hill, NJ
43. Roger Sedmont, Turnersville, NJ

Written Comments and Materials Submitted at the 2020 Public Forums:

44. William Love, Jersey City Transportation Analyst
45. Ron Wishart, Central NJ Transportation Board
46. Bill Roser, Coalition of New Jersey Cyclists
47. Albert F. Cafiero, Chairman,Transit Committee of Bergen County
48. William R. Wright, Director, New Jersey Association of Railroad Passengers
49. Bruce Haim,Committee for Sensible Transportation

Written Comments and Materials Received via Mail:

50. John Walz, NJDOT
51. Assemblywoman Charlotte Vandervalk
52. Bill Feldman, NJDOT
53. Roxanne Shin, Cherry Hill, NJ
54. Alex Chatterton, Atlantic City, NJ
55. Dan Rappaport, Princeton Bicycle Pedestrian Committee
56. Kevin Monaco, Director of Legislative/Regulatory Affairs, Utility and Transportation Contractors Association of New Jersey
57. Herbert Simmens, Director, Office of State Planning, NJ Department of the Treasury
58. Roger Sedmont, Turnersville, NJ
59. Nina Edwards, Associate Advocate, Eastern Paralyzed Veterans Association
60. Jim Healy, Chief Regulatory Officer, Office of Regulatory Affairs, NJDOT
61. Eli Cooper, Director, Cross County Connection
62. Robert A. Shinn, President, Barclay Area Civic Association
63. Martin Silvanage, Branchburg, NJ

ATTACHMENT B

Specific Requests and Concerns

NJ TRANSIT

1. Need for direct bus service between Ocean/Monmouth and Middlesex/Mercer Counties; run bus service between Middlesex and Monmouth Counties to determine if there is ridership demand. (2)

2. Request for light rail transit from the Meadowlands Sports Complex to the Boonton Line and connection to the Newark City subway. (47)

3. Request for implementation of "Circle of Mobility," including New York, Susquehanna & Western service. (48)

4. Request for double-tracking and electrification of the Montclair Connection through Denville. (48)

5. Request that Monmouth-Ocean-Middlesex Study be expanded to restore the former "Blue Comet" route to serve Atlantic City and the Garden State Parkway corridor, as well as intrastate freight markets (i.e., sand, produce, etc.). (48)

6. Request to enhance South Jersey mobility by creation of a West Jersey spine line from Trenton to Camden and Millville and a restored Winslow Junction connection to Cape May and Bridgeton. (48)

7. Request for implementation of light rail line proposals (Newark to Paterson, Elizabethport-Cranford-Summit, Middlesex County). (48)

8. Request to extend Saturday evening service on the Morris & Essex Line. (Last weekday train 1:45 a.m.; 12:30 a.m. on weekend.) (11)

9. Request for bus schedules for the Morris County Metro bus line (none available). (11)

10. Bus to Quakerbridge Mall does not wait for connection with rail passengers from Princeton Junction. (14)

11. Request for information on status of plan for regional train station [South Brunswick area]. (19)

12. Request for expansion of bus service along Route 1 corridor. (19)

13. Request for transit service between Woodbury and Lindenwold and from Woodbury to North Jersey. (29)

14. Request for improved safety on buses at night from Atlantic City. (29)

15. Concern that the Newark-Elizabeth Rail Link is poorly planned. (49)

NEW JERSEY DEPARTMENT OF TRANSPORTATION

Draft Plan

1. Recommendation that further work be done in terms of defining goals in the Report Card section of the Plan. (7)

2. Recommendation that Plan include creation of a task force to facilitate coordination between transportation agencies (i.e., SEPTA, Metro-North, LIRR, etc.). (11)

3. The following specific items were noted concerning the Draft Plan:
   - Page 13 - the discussion of the existing rail transit system fails to mention bicycle links with rail services, specifically accommodation of bicycles on trains and availability of bicycle parking at rail stations
     [Request that accommodation of bicycles be expanded to include
     all trains at all hours of the day.] -- NJT issue
   - Page 15 - request that "Park-and-Ride and Demand Management" section be separated into two sections and each area expanded; request for expanded discussion of NJDOT and Transportation Management Association rideshare programs (i.e., WHEELS); clarification - there are nine Transportation Management Associations not seven as stated in the Draft Plan
   - Page 24 - the "Limitations of the Transit Network" section should be expanded to discuss the lack of bicycles on buses and trains
   - Page 65, paragraph 4 - request that specific mode of transportation (i.e., train, bus) be identified when discussing the need for "bicycle storage at stations and stops, and on vehicles...." (15)

4. Recommendation that the following items be added to Strategy D - Provide Strategic System and Service Expansion:
   - expansion of bus service along Princeton-Somerville corridor
   - extension of bus route to serve new markets on Lower Ferry Road [Trenton]
   - need for bus transportation to Delaware River Park (18)

5. Request for more emphasis on bicycles in Strategy C - Maximize Service Provided by Current Transportation Infrastructure. (46)

6. Recommendation to amend and clarify Pavement Management System (PMS) section on page A-4:
   - *Delete*: "The Pavement Management System (PMS) is intended...commenced as early as 1986."
   - *Insert*: "Pavement management is a program for improving the quality and performance of pavement and minimizing their costs through use of good management practices. A Pavement Management System is a systematic process that collects and analyzed pavement information used as input in selecting cost-effective strategies for providing and maintaining pavements in a serviceable condition. The NJ DOT established an operational Pavement Management program in 1981."
   - *Delete*: "NJDOT will obtain data on state...to facilitate input into NJDOT's database."
   - *Insert*: "NJDOT will collect pavement data on 2,800 centerline miles of the NHS (National Highway System) and the SHS (State Highway System) and will contract with a consultant for pavement data collection on the 7,200 centerline miles of non-NHS Federal-Aid Routes as per the NJDOT Pavement Management Work Plan." (50)

7. The following specific items were noted:
   - Page ii - the discussion of the highway network in the Executive Summary should mention that these facilities are the locus of bicycle and pedestrian activity.
   - Page iii - the last sentence in the third paragraph should be changed to "Bicycling and pedestrian travel have considerable potential to meet both utilitarian and recreational travel needs."

- Page 1 - Paragraph 2 should mention that the road network is used for bicycle travel as well as automobile and bus.
- Page 22 - Under Old Infrastructure, lack of bicycle and pedestrian compatibility needs to be included as a weakness.
- Page 32 - Change title of New Technology section to "New and Appropriate Technology" to include bicycling and walking as "appropriate" modes of choice for short trips. Also, ridesharing information service would be another example of new information technology.
- Page 69 - The first paragraph should mention the completion of missing links for bicycle and pedestrian travel (i.e. gaps is bicycle compatible roadways, missing segments of sidewalk)
- Page 74 - Under Strategy F, add "Continue service agreements with Transportation Management Associations for delivery of Transportation Demand Management services to the traveling public."
- Page 76 - Third (full) paragraph, fourth sentence should begin with capital P.
- Page 77 - First paragraph should state that employers can encourage and support bicycling and walking at very little commitment of resources.
- Page 79 - Under Strategy G, add "Establish partnerships with Transportation Management Associations to implement TDM strategies as solutions to local transportation problems."
- Page 83 - In paragraph 3, explain the difference between the two dates (July 2026 and July 2006)
- Page 88 - Correct Exhibit 11, specifically the FY98 General Fund Appropriation.
- Page 89 - Entitle Strategy G "Exploit New and Appropriate Technology"
- Page 93 - Clarify the last sentence of the second paragraph.
- Page 105 - Under Community Resource, mention that NJDOT provides technical assistance to communities and others in bicycle and pedestrian friendly planning and design. (52)

8. The following specific items were noted:
   - In Chapter 2, the sections on rail, buses, the WHEELS program, and ferries should mention accessibility for the elderly/disabled.
   - In Chapter 4, incorporate the growing elderly segment of the population into the section on Challenges/Changing Demographics.
   - In Chapter 6, include in Strategy H mention about informing the public about accessible transportation services.
   - In Appendix C, glossary, amend the definition of the ADA Act of 1990. Its intent is not to make "sweeping changes" but to promote nondiscrimination and equal opportunity in all segments of society, doing so with minimal disruption of services. (59)

9. The following specific items were noted:
   - In Chapter 1- Introduction, discuss further pedestrians (as a mode) and ridesharing
   - Page 7-- In paragraph on Clean Air Act, amend sentence beginning "Transportation Choices 2020 espouses public policies..." to read "Transportation Choices 2020 espouses public policies and programs that support commuting alternatives relying less on automobiles and more on transit, ridesharing, alternate working arrangements (i.e., teleworking and compressed work weeks), and non motorized mobility options."
   - Give greater emphasis to the TMA; the critical link between NJDOT and the local leaders, including the business community, should be elevated in presentation in the plan and included as a "Showcase" item. (61)

10. On page vi, delete or amend the current text in the section "Provide for Strategic System and Service Expansion." Replace with: "Because of severe limits on the availability of state and federal funds, no highway widening, bypass, or missing link project shall be advanced without the support of a majority of the elected officials (local and state) and business and civic leaders who represent the interest of those living in the area wherein the proposed project shall be located." (62)

11. The following specific items were noted:
    - On page 14, the number of bus routes should be greater than the stated 50

- On page 16, include other interstate carriers which operate intercity. Also mention Atlantic City casino route operations.
- Appendix A: Summaries, should include all elements of the State's commercial passenger transportation industry (inclusion of private industry). (60)

12. The following specific items were noted:
    - On page 29, Policy Two, don't Delete "Attack congestion without encouraging more single passenger vehicles and inappropriate land use."
    - Page 68, delete "A highway expansion project is not automatically undesirable just because it expands highway capacity." (53)

Other

1. Request for improved intersections to accommodate bicycle crossings along Route 92, from Route 1 to the New Jersey Turnpike. (18)

2. Request for information on the status of the Route 70 reconstruction project; request that a portion of the construction funds be dedicated to safety improvements on Route 70. (38)

3. Request for information on the status of the Jersey Avenue/Route 1 project. (40)

4. Request that interchanges be used to provide access from northbound I-295 and the New Jersey Turnpike to eastbound Route 42 instead of reconfiguration of the entire area. (43)

5. Request for information on the effectiveness of the I-80 HOV lane. (18)

6. Request for ferry service between Newark Airport and the Highlands to serve Perth Amboy and Keyport. (2)

7. Request for improved bicycle access on the Route 9/Garden State Parkway Bridge between Tuckerton and Atlantic City. (55)

ATTACHMENT C

Responses to Comments Received on Statewide Long-Range Transportation Plan

1. Mass Transit

There were many comments asking for the initiation of new transit routes throughout the state. The Long Range Transportation Plan is a policy document that is clear about the desire to promote cost-effective transit services that support mobility, center-oriented development, tourism and the economy in the state. The evaluation of specific bus, rail, light rail and ferry proposals, as well as new transit technologies, are within the province of NJ TRANSIT, to which specific service and system expansion proposals have been forwarded. As the Plan states, "these projects will be decided on their merits." More generic transit suggestions fall into categories that have been addressed in the Long Range Transportation Plan or are already being addressed by NJ TRANSIT. These include the consideration of more direct and express rail, bus and paratransit services, less costly and more effective transit services, coordinated transit service and fares, and use of abandoned rights-of-way for transit.

2. Highways

Expenditures on Highways and Bridges

Most commentors agreed with the high priority NJDOT has placed on maintaining the existing highway and bridge infrastructure. One commentor felt that too much was proposed in the plan to be expended on highways and bridges. On the other hand, another commentor said that highways should receive greater emphasis.

Maintaining the existing transportation system will remain a high priority.

High Occupancy Vehicle Lanes (HOVLS)

One commentor questioned the benefit of HOVLs to businesses and trucks.

The plan notes several options for adding special vehicle lanes in highway expansion projects. HOVLs, by reducing the volume of single-occupant vehicles can provide greater capacity for commercial vehicles in other lanes and reduce their delays; another option would permit trucks, possibly paying a toll, in such lanes. HOVLs were generally supported by commentors.

Expanding Highway Capacity

One commentor recommended deleting all references in the plan that would support expansion of highway capacity for single-occupancy vehicles. It was commented that there were "loop holes" in the plan, by which highway expansion could be justified. It was asked: what conditions would justify expansion of highway capacity and who would make this decision.

The plan proposes that projects be formulated in partnership with the communities through which they go, and with stakeholders from the business, labor, environmental and civic sectors. (p.69) If an analysis and an evaluation of their effectiveness demonstrates that travel demand reduction and operational management strategies cannot fully satisfy the need for additional capacity in the corridor, additional highway capacity may be warranted. Travel demand reduction and operational management strategies include all of those in the congestion management system regulations including: travel demand management, traffic operational improvements, measures to encourage HOV use, public transportation capital and operating improvements, measures to encourage the use of non-traditional modes, congestion pricing, growth management and activity center strategies, access management techniques, incident management, intelligent vehicle-highway systems and advanced public transportation system technology.

Decisions will be made by the project sponsor, who will be responsible for environmental impact assessments involving, among others, local public officials. Projects must be found to conform to approved air quality plans and, if federally-funded, consistent with state and metropolitan planning organization transportation plans and improvement programs. Concerning "loop holes", it should be noted that in numerous places in the plan it is stated that highway projects that open up undeveloped areas to added sprawl should not go forward. Specifically, "we cannot expand the highway network where it will work against the goal of a center-oriented, sprawl-discouraging land use pattern." (p.68) Also, "and if it opens up undeveloped areas to more sprawl development, it does not achieve the goal, of this plan." (p. 68)

Missing Links

One commentor asked how NJDOT will develop a list of "missing links," (p. 69)

There is not a list of "missing links". The process for identifying "missing links" is dynamic and will take place throughout the transportation planning process.

Missing links will be identified in the development of network plans by metropolitan planning organizations and by NJDOT and special authorities. New or upgraded highways to fill identified gaps are subject to the analyses and other requirements discussed in Comment 3, above. The draft plan stated that "projects that serve existing centers and that assist the economy of the state through the support of tourism or the movement of truck freight are consistent with the plan." To clarify this sentence in the final plan, "directly" has been inserted before "assist" and "only" has been inserted before "through" in the above sentence.

The Causes of Congestion

One commentor asked that the causes of congestion be better defined in the plan.

The causes of congestion are discussed extensively in Chapter 3, Weaknesses: Pervasive Road Congestion (p.23), and Chapter 4, Challenges: Changing Demographics (p.27-28) and Community Design and Land Use (p.28-29). A sentence has been added to Changing Demographics to make its relationship to congestion explicit.

Reducing the Speed of Traffic through Communities

One commentor suggested that roads within communities be designed to moderate the speed of traffic. "Traffic calming" includes a variety of measures to reduce the amount and speed of traffic on local streets. This action has been added to the discussion of Strategy A, Support the Safety, Security and Health of the Transportation User (p.61) and to the list of actions for New Emphasis in the plan (p.62).

3. Pedestrian and Bicycle Issues

Comments regarding bicycling and pedestrian issues centered on the need to recognize these human powered travel modes as legitimate transportation alternatives which should be fully considered and supported. The plan has a strong commitment to improvements in the transportation infrastructure that supports bicycling and walking including safety measure, community design standards and highway design. A number of clarifications were incorporated into the plan to specify the important contribution these modes can serve in addressing environmental and mobility needs.

4. Intermodal Linkages

One critic of the report has challenged whether goods movement should be part of a goal, how such a goal enhances New Jersey's environment and, as minimum, should not the policy (or goal) emphasize movement of goods within the state as opposed to through it? Goods Movement and

Intermodal freight transportation are critical components in the dual effort of promoting economic development in New Jersey and educating the public on the importance of freight transport.

Transportation Choices 2020 set down five basic goals with several objectives stated under each goal. The first stated goal to Promote Economic Development includes three goods movement objectives:

- Provide for more cost - efficient movement of goods.
- Upgrade intermodal facilities and access to them.
- Improve access to .... freight facilities to serve international markets.

In addition, the plan proposed a strategy called Educate and Communicate. Within that strategy, the plan stated that "there is little under standing about the importance of goods movement."

New Jersey, of course, is the most densely developed state in the nation. Freight transportation by both truck and rail is vital to achieving a strong economy ranging from the house in which one lives to the car one moves, to the food on one's table and in the super market, to the clothes on one's back and to the amenities of life that one enjoys. Intermodal freight in a state like New Jersey is also vital. At Port Newark and Elizabeth in the north and South Jersey Port Corporation and adjacent private marine terminals in the south, there are millions of tons of freight moving from ship to truck or rail or vice versa that contribute billions of dollars to the state's economy - jobs, sale of goods, purchase power, banking, freight forwarding and many many more.

Similarity, intermodal air freight interchanging between the airlines or integrated carriers such as UPS and Federal Express and trucks at Newark International Airport contribute enormously to the economy. The goods are moved both within the state and through the state to such major centers as New York City, Philadelphia and beyond.

Other concerns expressed by reviewers of the plan included goods movement subjects in which the plan is in complete accord. These are:

- In response to the suggestion that rail freight should be included in the Trans Hudson Tunnel Study. The study includes a rail freight component which would have the effect of a significant reduction in truck traffic. This study, called "Access to the Region's Cote," is being conducted by NJ TRANSIT, the MTA and PANYNJ.

- Railroad freight should be utilized to the greatest extent possible because of its superior energy and cost efficiency.

5. Partnership

Comments were received about the need for NJDOT to develop more working partnerships with the state's broad range of stakeholders. The partnerships mentioned included; private/public partnerships inter-agency partnerships regional partnerships, business/government partnerships, TMA/NJDOT/NJT partnerships and MPO/NJDOT/NJT partnerships.

One of the showcase actions recommended in the draft plan calls for creating transportation partnerships. The partnerships are intended to be comprehensive and intermodal, including NJDOT, NJ TRANSIT, MPOs, county and local officials and civic associations, businesses, TMAs, transportation authorities and private transportation operators. The partnerships would be organized around a defined transportation corridor to solve specific transportation problems. The broad range of participation would allow for regional, comprehensive and intermodal approaches including changes in local land use regulations, highway and transit improvements, and employer based strategies, such as car pools, van pools and demand management. Agencies from other states need to be included when the problems cross state boundaries -- such as the Access to the Region's Core project now being undertaken by NJ TRANSIT, the MTA in New York, and the PANYNJ. An integral piece of this partnership would be a careful consideration about the transportation implications of land development patterns.

The plan strongly supports the increasing transportation planning responsibilities of the state's three MPOs. The intention is to use the plan to provide the statewide directions the MPOs need to develop their own transportation plan. Also, the Transportation Choices 2020 Plan has been carefully coordinated with the MPO plans to ensure there is a consistent approach being taken throughout the state.

While the plan does not specifically call the privatizing of New Jersey's transit and highway networks, it is very supportive of continuing efforts to use private initiatives to improve quality and cost effectiveness.

NJDOT, NJ TRANSIT, county and local governments' and private businesses' have invested in and support the nine Transportation Management Associations in New Jersey. This partnership between the public and private sectors represents a strong communications link between transportation providers and transportation users, specific employers and their employees.

6. Financial

Several comments suggested increased subsidies for NJ TRANSIT without suggesting a source of funding for these increased operating subsides. NJ TRANSIT has historically maintained an operating ratio in the range of 50 percent, which is typical of the operating ratios for the larger more mature transit agencies in the country. All levels of government are facing significant pressures to control budgets and reduce taxes and there is a strong possibility that Federal funding of NJ TRANSIT operations will be phased out in the next few years. Further, NJ TRANSIT may face increased operating costs relating to the shared used of Northeast Corridor facilities with AMTRAK. It is in this context of increasing funding requirements and limited funding availability that decisions regarding the level and source of non-operating funding for NJ TRANSIT must be made.

Another set of comments focused on the level of the state gas tax and whether the revenues are dedicated to transportation purposes. The current state motor vehicle fuels tax of 10.5 cents per gallon is one of the lowest state imposed motor vehicle fuels taxes in the United States and is significantly lower that the motor vehicle fuel tax rates of adjacent states. The new TTF legislation provides that an additional 6.5 cents per gallon of the current 10.5 cents per gallon state tax be constitutionally dedicated to the TTF. The increase would be phased in beginning in FY96 and gradually increased from the current 2.5 cents per gallon to 9.0 cents per gallon by the year 2000. The TTF legislation signed by the Governor on May 30, 1995, contains this dedication provision. New Jersey citizens will have the opportunity to vote in the November 1995 election on the constitutional amendment to dedicate all but 1.5 cents of the gasoline tax for transportation purposes.

Other comments focused on increasing education activities with regard to the real costs and subsidies provided to each of the modes. These comments are addressed below in the section on Education and Communications.

Several comments related to the extent to which local roads are funded by the TTF. Some wanted the TTF's contribution to Local Aid to be increased to decrease the financial pressures on local jurisdictions whereas others felt that local roads not used by the general public should not be funded by NJDOT. The proposal for the TTF renewal provides for a $30 million per year (or 30 percent) increase in the Local Aid provided by the TTF.

Another set of comments recommended actions and strategies to reduce the costs of the transportation program. Many of the strategies and actions contained in **Transportation Choices 2020** are designed to improve the effectiveness of delivery and reduce the costs of existing and proposed programs. This is a major motivation of Strategy C, "Maximize Service Provided by Current Transportation Infrastructure", Strategy F, "Improve Management Practices", and Strategy G, "Form Partnerships with Local Communities, Businesses and Agencies."

A final set of comments requested a detailed financial plan for the recommendations contained in **Transportation Choices 2020.** This document provides a long-range statewide transportation plan

and sets forth a vision of the future direction for the state's transportation policies and program. In this context, it is neither appropriate nor feasible to define a detailed financial plan. The new TTF legislation sets forth the proposed state funding for transportation capital investment through FY 99; the budgets submitted by the Governor will describe the related operating budget proposals for NJDOT and NJ TRANSIT.

7. Transportation for the Physically Challenged

Several comments were made about the effectiveness of NJ TRANSIT's Access Link services being developed around the state, particularly about the need for more service, the need for attendants on the vehicles, better information about available services, and the ability to pay monthly rather than for each trip.

New Jersey is in the process of implementing a statewide paratransit service. The services will be run by private operators under contract to NJ TRANSIT. The Access Link services were first implemented in Mercer County, then in the southern counties. The services will be implemented statewide by early in 1996. While the elements of the service are regulated by federal law, and NJ TRANSIT is committed to meeting all federal requirements, NJ TRANSIT understands the importance of providing operators who are aware of their passenger's special needs and are trained to respond to them. As the services begin operating throughout New Jersey they will be monitored, especially for the customer's satisfaction with personnel and the availability of information.

8. Congestion Management Pricing

There were a number of comments about pricing of transportation services. A number of actions in the plan involve using the market place to shape demand to improve the effective use of the transportation system. In the "Partnership Strategy" section (p.75) there is a discussion of transportation vouchers and of cash payments in lieu of free parking. In the "Exploit Technology Strategy" (p.70) section there is the discussion of charges for single occupant vehicles for use of under used HOV lane capacity. In the "Maximize Service Strategy" (p.65) section there is a mention of congestion pricing. This last action is also a showcase action. Pricing incentives are powerful tools to shape demand in the public and private sectors today. Utilities, resorts, and intercity transportation systems make use of the principle that when demand puts the greatest burden on a supplier, the price is changed to shift demand toward unused capacity, thereby avoiding costly infrastructure expansion. This is currently not done on the highway network in New Jersey despite the levels of peak period congestion. Road pricing is intended to shift riders to hours when roads are less congested, leading to reductions in delays in the peak hours and possibly to avoid constructing of new facilities.

9. Emerging Technology

Several persons commented on the significant role that technology will play in the future transportation system. Support was expressed for monorails; on the other hand, there was a concern that such innovations not discourage the use of currently available technology, where appropriate.

The plan contains a number actions in Strategy E, Exploit Technology that foster the development and application of new technology (p.70-73).

10. Education

Comments related to education and communications emphasized the need to increase public awareness of transportation choices through improved marketing and education. The focus was on the need for greater public understanding of the relationship between specific transportation modes and economic, environmental, and quality of life factors. Goods Movement and subsidies were targeted as two areas that require particular attention because of limited public understanding.

Commentors recommended a number of techniques for educating the public: improved marketing of the transit system; workshops for local officials on the relationship between land use and

transportation planning; continued customer involvement through the issues groups, public forums, and survey/focus groups efforts; improved dissemination of schedule, fare, and travel information; and increased information concerning transportation services for the physically challenged.

11. Showcase Actions

One commentor did not feel that the draft plan aggressively pursues the use of transportation investments to support the SDRP. Before effective, coordinated land use and transportation planning can occur, a dialogue must be established between all significant parties. While there has been criticism that the Plan "does not go far enough," or "ducks the key link between transportation and land use planning, "consider the following baseline conditions:

- New Jersey has over seven million residents and workers, who have both a right and responsibility to participate in the process which will make decisions that will affect their lives. This process must accommodate any and all who wish to participate.

- Numerous state, intrastate, regional and local agencies and authorities formulate policies which affect land use and transportation. They too must be included, and their plans and policies coordinated.

- New Jersey's residents and workers travel by many modes to their varied destinations, but the primary means is by car on New Jersey's 34,000 mile road network. Of this number, 70% of the total highway mileage is classified as local roads or streets, generally under municipal jurisdiction;

- Not only is most of the state's highway network under local jurisdiction, land use policies and decisions which are the primary determinants of how efficient and the effective transportation can be are made at the local level. Less than half of the state's 567 municipalities have a Circulation Element as part of their municipal Master Plan; many of those that do not sufficiently address the range of mobility issues as needed.

These realities formulate the basis of any long-range planning effort. Transportation Choices 2020 supports the SDRP's policies, and continues the spirit of that open process. Before we "draw lines," or "make lists," we must state our opinions and air our differences, formulate a common vision and goals, and establish broad strategies from which we can act. Actions to be implemented logically follow, and those responsible must know their roles. The broad strategies, potential actions and showcase actions contained in this plan are the beginning of the long-range planning process.

In response to comments about the impacts of the "cash for clunkers" showcase action on low-income owners of motor vehicles, a statement has been added to the description of the action, indicating that the program would be voluntary in nature.

12. Miscellaneous

One commentor proposed that general aviation costs be completely privatized and self-funded.

In Strategy C. Minimize Service provided by current Infrastructure, the plan proposes two actions intended to preserve and enhance public use general aviation airports. (p.66) These general aviation airports are considered to be one of New Jersey's assets in attracting and maintaining business and economic activity and, as such, warrant some measure public assistance.

There was concern expressed that the goals of the plan are too general. The goals are purposely designed to be general. The 29 objectives associated with the final goals are specific and are designed to identify actions.

There were numerous comments about the lack of details concerning the report card. This is acknowledged. More work on creating benchmarks to track the achievements of plan objectives will be pursued by NJDOT.

APPENDIX B

SUMMARIES OF OTHER STUDIES AND PLANS RELATED TO THE STATEWIDE LONG-RANGE TRANSPORTATION PLAN

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A. Other Statewide Plans

1. Urban Supplement
2. NJ TRANSIT Long-Range Plan
3. Statewide Bicycle and Pedestrian Master Plan
4. Integrated Transportation Management Strategies Master Plan
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B. Management System Studies

1. Pavement
2. Bridge
3. Safety
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D. Other Studies

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2. New Jersey Scenic Byways Program
3. Goods Movement Information Database
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SUMMARIES

A. Other Statewide Plans

1. Urban Supplement

An Urban Supplement to the Statewide Transportation Plan is required by State legislation. The purpose of this study, prepared by NJDOT in cooperation with NJ TRANSIT, is to examine the access needs of urban areas with particular emphasis on the problems of inner-city residents in reaching jobs in suburban locations. The major cities within the state included in the Urban Supplement are Atlantic City, Camden, Elizabeth, Jersey City, Newark, Paterson and Trenton. The initial study was completed in 1993. This update will review actions underway to meet identified needs.

a. In cooperation with transportation management associations (TMAs) throughout the state, NJ TRANSIT is developing plans to address service gaps. NJ TRANSIT developed its WHEELS program to expand reverse commute rail and bus service to suburban employment sites and shopping malls. City-to-suburb bus service and intermodal connections have been increased so that riders can transfer from passenger rail to bus to suburban job sites.

b. Major new initiatives to benefit inner-city residents include planned light rail systems in several areas of the state.

c. NJ TRANSIT will focus marketing efforts on providing information to potential riders and continue to develop a staged plan to improve bus stop identification and signage.

d. NJ TRANSIT and the TMAs will address the issue of high fares by encouraging employers to participate in a $60 per month tax-free transit subsidy.

e. Security concerns are being addressed by installing radios on all buses to enhance communication with local police and letting passengers off closer to their destinations rather than only at designated bus stops.

2. NJ TRANSIT Long-Range Plan

The long-range plan is based on a vision of what New Jersey's transit system can be. It addresses the needs of both the public and private sectors building upon the current commitment to the major new initiatives by NJ TRANSIT. The plan emphasizes significant input from existing and potential customers so that the citizens of New Jersey have ownership in the plan. Specific transportation goals include the following:

a. Satisfy the real travel needs of the state's citizens.

b. Provide more effective and efficient public transportation facilities.

c. Reduce congestion and improve air quality.

d. Encourage more centered urban and suburban development.

This study is scheduled to be completed by October 1996, at which time a working Public Transportation Management System, described below, is to be put in place. While this work is still in progress as of March 31, 1995, important data, results and findings have emerged, many of which have been included in the strategies and specific actions in the Statewide Long-Range Transportation Plan.

3. Statewide Bicycle and Pedestrian Master Plan

The New Jersey Bicycle and Pedestrian Master Plan defines the strategies and actions which NJDOT and other state, regional, county and local agencies must follow in order to make New Jersey a place where people will choose to bicycle and walk when they have the opportunity to do so. The plan establishes goals to increase the amount of bicycling and walking that occurs in the state for commuting, personal trips, business trips and recreation. Given the large number of short trips which occur daily in New Jersey, the potential for walking and bicycling to address transportation and environmental problems is substantial, as recognized in the plan.

In addition to the Bicycle and Pedestrian Master Plan, which provides a strategic framework for improving bicycle and pedestrian circulation, the Master Plan study includes as tasks the identification of bicycle and pedestrian improvement projects, the revision of existing design guidelines for bicycle-compatible roadways and bikeways and the preparation of new design guidelines for pedestrian-compatible roadways A professional development course for engineers and planners is being developed as part of the study. This course will describe how bicycle and pedestrian facilities can be routinely incorporated into transportation improvements as they are being planned and designed.

In conjunction with the Master Plan, an *NJDOT Action Plan* is being prepared which will highlight the specific policies and procedures the Department will need to routinely assure that its projects are bicycle and pedestrian compatible. A *Community Resource Manual* will be prepared to provide county and municipal officials with the information they will need to implement bicycle and pedestrian facilities in their communities.

4. Integrated Transportation Management Strategies Master Plan

In New Jersey, the lack of available rights-of-way, escalating construction costs and environmental regulations have limited the construction of additional roadway lanes to serve the growing demand for personal travel and the extensive demand for the movement of goods. NJDOT has recognized that the opportunities to "build" out of congestion in highly developed corridors are extremely limited. Therefore, new traffic and incident management techniques must be employed using Intelligent Transportation System (ITS) technologies to improve the utility and viability of the existing and planned roadway and transit systems.

The purpose of the study is to develop strategies to manage highway congestion and traffic incidents on a statewide basis. This project creates a procedure for identifying, testing and selecting various traffic management programs for the major roadway corridors of the state. Programs include: integrating traffic management improvement programs with those of other authorities and neighboring states, utilizing the latest ITS and incident management techniques, and providing data to increase driver decision options, among others. While the Master Plan is not fully completed, preliminary results have been included in the Statewide Long-Range Transportation Plan.

5. Statewide Intermodal Strategic Plan - Goods Movement

This project will develop a strategic plan for the intermodal movement of goods through the state. It will focus on state needs as well as maintain a broad overview by mode of regional and global needs and trends. A strategic analysis of the system, strategic goals for remaining competitive, and performance measures are included. The plan will be closely connected to the Intermodal Management System - Goods Movement, described in the next section.

B. Management Systems Studies

Under the 1991 ISTEA legislation, the states were mandated to develop, establish and implement seven management systems: Pavement Management, Bridge Management, Safety Management, Congestion

Management, Public Transportation Facilities and Equipment Management, Intermodal Management and Traffic Monitoring. The legislation required that these systems be developed in cooperation with the Metropolitan Planning Organizations. In New Jersey's case, the three MPOs cover the entire state.

While each of these systems is being developed in accordance with the federal regulations, New Jersey recognized early in the development of its management system process that integration of the systems would be beneficial to facilitate coordination and avoid duplication of department efforts. As a result of discussions throughout the department and with representatives from each of the MPOs, the New Jersey Office of Highway Safety, NJ TRANSIT and the New Jersey Division Office of the Federal Highway Administration, all the systems are being integrated with respect to data, hardware platform, and decision-making support outputs.

Information supplied through the management systems has been used as input to this long-range planning and will be used in supporting investment decision-making in the state. There has been general agreement that the integration and decision-making process should be driven by overall goals and objectives for transportation as articulated in this Statewide Long-Range Transportation Plan. The management systems will use the goals and objectives of the plan to provide a focus or framework for meeting the state's transportation information needs.

Following is a brief summary of each of the management systems.

1. Pavement Management System (PMS)

Pavement management is a program for improving the quality and performance of pavement and minimizing its cost through the use of good management practices. A pavement management system is a systematic process that collects and analyzes pavement information and selects cost-effective strategies for providing and maintaining pavements in a serviceable condition. NJDOT established an operational pavement management program in 1981. From the interviews with technical experts and past studies, technical data and information were gathered and analyzed. The data included ride quality, surface distress, rutting, surface friction, cost data, maintenance experience and life-cycle costs. This has enabled NJDOT to build a strong database on this subject and to establish important measures of performance.

The PMS development included a number of analyses:

- Condition analysis includes ride quality, surface distress, rutting, surface friction and structural capacity;
- Performance analysis relates conditions over time to different rehabilitation treatments and various environmental and traffic levels;
- Priority assessment/ranking includes a prioritized list of recommended candidate projects for one and multi-year periods;
- Economic analysis includes an estimate of network-level and project-level investment strategies. Network-level includes total cost estimates for present and projected future conditions. Remaining life analysis will be incorporated as a system option; and
- Feedback analysis includes the annual evaluation and updating of procedures, calibration of the PMS performance data and the agency's most current engineering criteria.

NJDOT will collect pavement data on 2,800 centerline miles of the National Highway System and the State Highway System and will contract with a consultant for pavement data collection on 7,200 centerline miles of federal-aid routes not on the National Highway System.

2. Bridge Management System (BMS)

Principal goals of the BMS are to: a) improve the structural conditions of bridges in the state using all available funding resources and to minimize the cost of system maintenance and repairs; b) maintain the bridge system so that there are no posted structure limits in the state highway system; c) ensure continuous service to all bridges considered as primary access routes and to reduce the overall state of deterioration of bridges; and d) effect a reduction in unscheduled maintenance to reduce traffic impedances.

This work has been carried out largely by NJDOT staff. A series of interviews with technical experts in the fields of bridge design and maintenance was conducted. Work was coordinated with other transportation agencies throughout the state. In metropolitan areas, the BMS was developed by NJDOT in cooperation with the MPOs. The methods used by various state highway agencies to identify needs and prioritize projects for maintenance, rehabilitation and replacement were reviewed and compared.

Included in the system are a level-of-service concept for defining bridge improvement needs, methods for priority ranking of bridge projects, a procedure for determining optimal maintenance strategies, and several approaches to bridge service life prediction and future need projection. Methods for evaluating the costs and benefits of bridge improvement alternatives considering both life cycle and user costs will be presented together with an analytical approach to network-level priority optimization. Algorithms for estimating user costs related to functional deficiencies of bridges are being developed. An incremental benefit/cost analysis for priority ranking will be investigated to compare systemwide bridge improvement alternatives with the objective of maximizing net benefits.

The BMS is to be developed, established and implemented by the last part of 1997, and will include appropriate development of computer software and hardware applications.

3. Safety Management System (SMS)

As defined by NJDOT, the primary purpose of a Safety Management System is to reduce accident frequency and severity on highways. An additional goal is to foster the use of safety improvement technology by local jurisdictions. ISTEA requirements include vehicle and driver issues as well. NJDOT's role in the SMS, therefore, is somewhat different than in other management systems. NJDOT is a partner in the SMS process which builds on strong lines of communication, coordination and cooperation among all highway safety agencies. It will focus on the educational component of the program to foster the preventive element. As of March 31, 1995, this SMS is substantially completed.

Prior to ISTEA regulations, NJDOT was working on a system to identify locations where safety measures could be implemented. Highway measures to be taken include: intersection improvements, raised pavement markers, fixed object relocation, traffic signalization, pavement and roadside delineation, and wet accident reduction.

Each year the Department's Safety Section prepares an annual safety report. The report addresses cost/benefit analyses of completed highway safety improvements and statistical analysis of 10-year trends for injury, fatal and property damage accidents. All safety improvements are evaluated after at least two years or after accident data is available. One difficulty in working with local and county governments which needs to be addressed is that report mechanisms and data availability are different from the state format.

4. Congestion Management System (CMS)

The purpose of New Jersey's CMS study is to develop a systematic process that will provide information on transportation system performance to decision-makers for selecting and implementing cost-effective strategies to manage new and existing facilities. These strategies are designed to alleviate traffic congestion and enhance the mobility of persons and goods.

The CMS includes the following major considerations:

- Identification of corridors where congestion is occurring, or where the potential for congestion exists, based on an acceptable level of transportation system performance established by the state and each of the MPOs. Because existing data is limited, the initial version of the CMS will use volume, capacity and average vehicle occupancy to screen for congestion.

- Establishment of performance measures that will provide for the identification and monitoring of the extent of both recurring and nonrecurring congestion and the evaluation of the effectiveness of congestion reduction and mobility enhancement strategies. Performance measures relating particularly to the CMS will be person- and goods-based, rather than vehicle-based.

- Establishment of a continuous program of data collection and system monitoring so that the duration and magnitude of congestion can be determined. Both existing and new sources of data have been considered in order to best meet the data requirements of selected performance measures.

Congestion management considerations are a key part of most of the strategies and many of the related actions developed in the Statewide Long-Range Transportation Plan. In developing the CMS, particular attention was given to the coordination among NJDOT, NJ TRANSIT and the three MPOs to assure overall consistency. It is anticipated that the CMS will be completed in the last part of 1995; this will meet the federal CMS deadline for an air quality non-attainment area.

5. Public Transportation Equipment and Facilities Management System (PTMS)

The goal of the PTMS is to provide information necessary for the management of public transportation facilities and equipment. The PTMS will provide information which will allow priorities for public transportation to be fully considered in parallel with priorities for other modes.

The work plan for PTMS was developed by NJ TRANSIT and spans all transit services within the state, including those supplied by private operators. The PTMS has been coordinated with other management systems being developed by NJDOT, particularly the IMS, CMS and TMS.

This PTMS includes the following components:

- Identification of condition measures, including standards which reflect goals and objectives for safety, efficiency and reliability;

- Data collection and system monitoring, coordinated with the IMS, CMS and TMS, and including at a minimum:

  - base year comprehensive inventory of transit assets, including age, condition, remaining useful life and replacement cost;

  - ridership data for dedicated transit rights-of-way (e.g., rail and busway) at the maximum peak load point and peak vehicles;

- Evaluation of proposed strategies and projects, including status and condition of all assets previously inventoried, needs and schedules for major maintenance and replacement, and the estimated replacement costs; and

- Implementation of strategies and projects, including costs, potential funding sources and priorities of proposed strategies and projects.

Much of this work has been completed; it is anticipated that the PTMS will be essentially completed by the end of 1995.

Because of their distinct differences, the required Intermodal Transportation Management System (IMS) has been divided by NJDOT into two studies - IMS-Passenger and IMS-Goods Movement. These are summarized below.

6. Intermodal Management System - Passenger (IMS-Passenger)

The purpose of the IMS-Passenger is to develop a system to analyze and monitor the performance and efficiency of intermodal passenger transportation facilities and to prepare and implement plans for improving deficient facilities. Major areas of emphasis in this study are: 1) a comprehensive passenger facility inventory and database; 2) customer perspectives on intermodal connections; 3) plans and strategies that are compatible with policies and capabilities of NJDOT, the MPOs and the transit operators; and 4) integration of the intermodal facility analysis and conclusion with related management systems, such as PTMS, CMS, and IMS-Freight. Because the IMS-Passenger is tied closely to many public transportation facilities, NJ TRANSIT participated in developing the work plan. It also reflects input from the MPOs.

The most significant components of the IMS-Passenger include:

- A comprehensive inventory of intermodal passenger facilities;

- Creation of performance measures and standards (which ultimately direct the actual facility evaluations);

- A list of recommended strategies to upgrade deficient facilities; and

- A system monitoring and tracking program to provide continuing data with which to measure the effectiveness of each intermodal facility's operation.

This work commenced in 1993 and is well advanced towards completion, anticipated in 1996.

7. Intermodal Management Systems - Goods Movement (IMS-Goods Movement)

The primary objective of the IMS-Goods Movement is to assist the state transportation planning process to better manage its intermodal freight connections, increase the use of performance-based measures, and facilitate outreach to freight transportation customers. The intermodal freight study has incorporated the following factors:

- Freight facilities identified included, but were not limited to, highway elements, coastal ports, airports, marine and/or rail terminals, and major truck terminals.

- Parameters have been identified that will allow measurement and evaluation of the efficiency of the movement of goods from origin to destination. Parameters may include the total travel time, cost and volumes for moving cargo; origins and destinations; capacity; accidents; ease of access; perceived quality; and the average time to transfer freight from one mode to another.

- A base year inventory consisting of physical condition and operational characteristics may include the total travel time, cost and volumes for moving cargo; origins and destinations; capacity; accidents; ease of access; perceived quality; the average time to transfer freight from one mode to another; and environmental impact information for the intermodal facilities and systems.

- Data collection and system monitoring is used by the state and local agencies to evaluate the performance of intermodal freight facilities and systems. The performance evaluation program is to determine the efficiency of the movement of goods as part of an intermodal transportation system.

- Strategies and actions will be developed and evaluated for improving intermodal efficiency. Statewide as well as local strategies and actions have been identified for the movement of goods. Methods for increasing productivity, increasing the use of advanced technologies, and using innovative marketing techniques are also being evaluated.

- Implementation strategies and actions will be developed for improving the intermodal freight productivity of transportation systems for both the short and long terms.

Completion of the IMS-Goods Movement is anticipated in the fall of 1996 in time to meet the federal mandate.

8. Traffic Monitoring System - Highways (TMS/H)

The TMS/H is one component of a comprehensive Transportation Monitoring System which is to encompass all other modes of person and goods movement. The goal of the TMS/H is to monitor the characteristics of highway travel and identify trends in travel at particular points, and by extrapolation, through corridors, within counties, within regions, and at a network level based on classification.

The TMS/H builds on NJDOT's evolutionary traffic monitoring program. The system will consist of a network of continuous and short-term counting, speed monitoring, vehicle type classification and weigh-in-motion stations. Average passenger occupancy data will be approximated using accident records data, with periodic visual observations of occupancy for special purposes and to validate the accident records method. Turning movement counts will be made manually for internal needs, to support air quality monitoring, and for other management systems. Advances in technology will be exploited whenever possible to improve the accuracy, reliability and efficiency of data collection. The target for full TMS/H is 1997.

C. Metropolitan Planning Organizations (MPOs) Long-Range Plans

1. North Jersey Transportation Planning Authority (NJTPA)

The NJTPA encompasses a 13-county area of northern New Jersey. Work on the long-range plan involved analyses of major transportation issues in this area. The study included analyses of a) regional demographic influences, b) regional economic influences, c) journey to work in northern New Jersey, and d) federal and state mandates affecting regional transportation (e.g., Clean Air Act Amendments, ADA, SDRP, etc.).

The study identified major transportation challenges facing the region as: infrastructure repair, replacement and maintenance; road congestion; air pollution; suburban mobility; limitations of the rail network; transportation equity; transportation funding and freight transportation. A separate

Intermodal Freight Coordination study was conducted to identify deficiencies in the intermodal system and recommend improvements.

The planning activity included an extensive public involvement process including individuals and representatives of county, civic, labor, business, environmental, regional planning and transportation advocacy organizations. An economic development committee was established to concentrate on freight and other transportation improvements that will benefit the state and regional economy. The Long-Range Plan report is nearing completion.

2. Delaware Valley Regional Planning Commission (DVRPC)

The DVRPC is responsible for regional planning in the bi-state Camden/Philadelphia region, and includes four counties in New Jersey and five counties in Pennsylvania. The goal of the plan (DVRPC 2020) is to link land use planning, transportation planning and environmental considerations, and to preserve and strengthen existing resources in the region to create a more compact pattern of development.

Objectives of the plan include: a) concentration of new development in existing urban centers, b) encouragement of mixed use and efficient linkages between land use and transportation, c) reduction of the use of single-occupancy vehicles, d) encouragement of increased transit usage, e) provision of a competitive regional economy and job opportunities for the existing labor force, f) promotion of intermodal freight movement, g) improvement of accessibility to the region's transportation network, h) ensuring an adequate supply of quality affordable housing for all income groups, i) ensuring a clean environment, j) integration of an environmental protection objective into all planning activities, and k) improved air quality and compliance with the CAAA requirements.

The study is being conducted by DVRPC staff, with major attention being given to public participation, including a Public Participation Steering Committee, outreach meetings, newsletters, charrettes, public hearings and consideration of alternative scenarios for future developments. A draft of the Plan was released in October 1994.

3. South Jersey Transportation Planning Organization (SJTPO)

The newly formed SJTPO is responsible for developing a long-range transportation plan for four counties in New Jersey. Technical work consists of: establishing baseline conditions; developing future transportation conditions; identifying future transportation improvements; strategies and actions; developing a financial plan; and conducting air quality conformity analyses. These efforts interact with extensive public involvement activities at critical milestones to ensure timely public input to the plan. Work began in 1994 and a draft for public review will be completed by May 1995.

Major challenges to the SJTPO region include: strong travel demand in and around Atlantic City, access for the tourism industry in Atlantic and Cape May counties, freight rail service provided by private carriers that is not used to its maximum capacity, auto-dependent growth in the region which has led to increases in auto traffic and congestion, and the difficulty of providing traditional transit service efficiently in suburban and rural markets.

D. Other Studies

1. Major System Completion Impact Study

The purpose of the Major System Completion Impact Study is to determine the effects of completion of the Interstate Highway System and other major projects on regional trip making and goods movement in the state of New Jersey. The goals of the study are to:

a. Analyze the impact of goods movement across the state,

b. Utilize improved data sources and modeling techniques as available,

c. Address statewide planning issues, and

d. Identify future planning needs.

Data sources utilized in this project include various transportation models of the NJDOT, DVRPC, New Jersey Regional Planning Association and the PANYNJ. The TRANSPLAN model has been the key software utilized in this technical study.

2. New Jersey Scenic Byways Program

The purpose of the Scenic Byways Program is to establish criteria for identifying, evaluating, designating and managing scenic and historic resources linked via byways. The goals of the Scenic Byways Program are to identify and designate scenic resources that will a) protect and advance the scenic historic, cultural, recreational, natural and archaeological qualities of a Byway, and b) encourage tourism, promote commerce, improve traffic flow, enhance quality of life and yield other benefits to both New Jersey residents and out-of-state visitors.

NJDOT has informally designated Route 29 as its first Scenic Byway, and a study was conducted by NJDOT staff in conjunction with the Office of State Planning. NJDOT interviewed elected officials of the various municipalities along Route 29 as well as other groups interested in this subject. Examples of improvements to be considered are: providing guide rails which are aesthetically compatible with the surrounding area, repositioning utility lines, replacing existing lighting with more attractive fixtures, and landscaping to conceal unattractive features. This phase of the study is expected to be completed in early summer 1995.

3. Goods Movement Information Database

The primary goal of this study is to have a goods movement information database. It will be closely coordinated with the Intermodal Management System-Goods Movement, described above. The ability to respond to future questions regarding the movement of goods by various modes will provide a sound basis for strategic planning. The data will be maintained in the form of a proprietary database, provided by a consultant.

4. Demographic/Economic Study

The Demographic/Economic Study and preliminary state and county baseline forecasts are a set of long-term forecasts which will assist the State of New Jersey in its overall long-range planning efforts. The goals of the study are to reflect recent macroeconomic trends at the national and state levels, and current and foreseeable conditions in land use development at the local level. Each step results in desegregating the forecasts to a smaller geographic/political unit level. Technical products include the following:

- The forecasts of New Jersey State, 1990 to 2020, represent two separate scenarios of New Jersey growth in employment by industry, population by age and race, labor force by age, households by age/type/size, and income by aggregate personal income and household income distributions.

- The forecasts for New Jersey Counties, 1990 to 2020, represent a disaggregation of the preferred statewide forecasts of population, employment by major industry division, labor force, households and income to the county level in New Jersey, yielding aggregate forecasts of

these variables for five-year intervals, 1995-2020. As a by-product of this analysis, a forecast is to be available of future work trips in a county-to-county worktrip matrix for the state.

- The forecasts for New Jersey Municipalities, 1990 to 2020, represent a disaggregation of county forecasts of population, employment, labor force, households and income to the municipal level in New Jersey, yielding aggregate forecasts of these variables for five-year intervals from 1995 to 2020.

APPENDIX C

CHECKLIST OF ISTEA REQUIREMENTS

The ISTEA legislation contains a list of 23 factors to be considered in the statewide transportation planning process: "each state shall, at a minimum, explicitly consider, analyze as appropriate and reflect in planning process products the following factors in conducting its continuing statewide transportation planning process." The full list is contained in Chapter 1 of the Plan. As is noted below, in many cases the factors are considered in MPO, modal, and other components of the statewide planning process. These other studies are briefly summarized elsewhere in the Appendix. The individual strategies can be located using the Table of Contents in the front of this document.

1. *The transportation needs (strategies and other results) identified through the management systems;*

   The transportation management systems outlined in ISTEA are briefly summarized in the Appendix. Pavement and bridge management systems were initiated before the ISTEA legislation and have yielded significant results. These are reflected in actions of Strategies A and B, "User Safety . . . and Maintain . . .Infrastructure." The other management systems are less developed, several having reached only the work plan phase. Strategies and other results of these systems will be incorporated into the long-range plan, where they are not now included, as they are developed.

2. *Any federal, state or local energy use goals, objectives, programs or requirements;*

   Federal and state energy goals are clearly recognized in this plan. Objective 2f is: "Reduce the need for travel" and Objective 4e is: "Encourage greater energy efficiency." Many strategies and actions emphasized in the plan will increase energy efficiency: directly, by improving highway operations, and indirectly, by improving transit facilities and service and encouraging transit-supporting land use.

3. *Strategies for incorporating bicycle transportation facilities and pedestrian walkways in appropriate projects throughout the state;*

   A statewide bicycle and pedestrian master plan has been developed by NJDOT and is summarized in the Appendix. Objectives 2d, "Provide additional transportation choices," and 4f, "Make the transportation system easier to access," both have yielded strategies and actions that provide for more and better facilities for bicyclists and pedestrians - sidewalks, shoulders, paths, storage facilities and others. This subject was especially well covered in the public involvement process.

4. *International border crossings and access to ports, airports, intermodal transportation facilities, major freight distribution routes, national parks, recreation and scenic areas, monuments and historic sites, and military installations;*

   While New Jersey has no international border crossings, it does have international airports and marine terminals. Several strategies and actions address Objective 1d, "Improve access to passenger and freight facilities to serve international markets." Strategies C, " Strategic System and Service Expansion," D, "Maximize Service Provided by Current . . . Infrastructure," and E, "Exploit Technology," contain numerous actions which address Objective 1e, "Stimulate tourism," and will meet this requirement. Access to military installations in New Jersey is not a significant problem, nor is it expected to be in the foreseeable future.

5. *The transportation needs of nonmetropolitan areas . . .*

   All areas of New Jersey are contained in its three MPOs; this is not applicable.

6. *Any metropolitan area plan . . .*

   MPO plans are briefly summarized in the Appendix. During the preparation of this plan, NJDOT coordinated planning work closely with the MPO planning programs and staff. Many of the goals and objectives enunciated for and the strategies and actions emphasized in the plan can be traced back to the NJTPA, SJTPO and the DVRPC plans.

7. *Connectivity between metropolitan areas in other states;*

   New Jersey has frequently been characterized as a "corridor state" between New York and Philadelphia. Highway, rail and waterway linkages through New Jersey are vital to the entire Northeast Corridor as well as connections to the west and northwest. Almost all the strategies and actions in the plan will facilitate connectivity through the state. Improvements to specific connections will be laid out in the facility plans of NJDOT, NJ TRANSIT, PANYNJ, DRPA and other agencies.

8. *Recreational travel and tourism;*

   To some degree this overlaps with requirement 4 above, and the actions of Strategies C, D and E, cited earlier will address Objective 4e, "Stimulate tourism," and many other objectives related to recreational travel.

9. *Any state plan developed pursuant to the Federal Water Pollution Control Act (and in addition to plans pursuant to the Coastal Zone Management Act).*

   The many actions directed at Goal 3, "shape desired development patterns" will help minimize water pollution and coastal zone concerns.

10. *TSM and investment strategies designed to make the most efficient use of existing transportation facilities (including consideration of all transportation modes).*

    Strategy D contains 29 new initiatives, new emphases and actions to be continued that will "Maximize the Service Provided by Current Transportation Infrastructure," and the actions cover all modes. This is a major emphasis of the plan.

11. *The overall social, economic, energy and environmental effects of transportation decisions (including housing and community development effects and effects on the human, natural and manmade environments).*

    While social, economic, environmental and other impacts of projects are addressed in environmental assessments and impact statements, these issues were addressed at the statewide scale in the State Development and Redevelopment Plan. Goal 3 is to "shape development patterns consistent with the SDRP," and Strategy G, "Partnering with Local Communities and Businesses," contains many actions designed to meet this goal. This requirement is also met in Objective 2b, "Meet or exceed environmental standards."

12. *Methods to reduce traffic congestion and prevent traffic congestion from developing . . . including methods which reduce motor vehicle travel, particularly single-occupant . . .*

    Strategies C, D and E contain many actions to reduce current traffic congestion by increasing transit and HOV use, implementing a variety of ITS programs, and increasing highway capacity in selected

cases. Strategies G, "Partnering . . .," and H, "Education and Communication," contain actions to support Strategies C, D and E, and to reduce future traffic congestion by encouraging land use patterns and traveler choices that generate less traffic.

13. *Methods to expand and enhance appropriate transit services and to increase the use of such services (including commuter rail).*

The plan contains many actions, in Strategies A, B, C, D and E, that expand and enhance transit services. And it contains actions in Strategies G and H that will increase the use of such services.

14. *The effect of transportation decisions on land use and land development . . . (analyses should include projections of economic, demographic, environmental protection, growth management and land use activities consistent with development goals and transportation demand management projections).*

This requirement overlaps 11 to a considerable degree, and Goal 3, discussed in that context, deals directly with land use effects of transportation decisions. The analyses noted bear more significantly on the regional and corridor scale, and are addressed in MPO and corridor planning. The development of corridor management plans is one of the new initiatives of Strategy G.

15. *Strategies for identifying and implementing transportation enhancements where appropriate throughout the state.*

We understand this to refer to the ISTEA Enhancement Program, which funds facilities for bicycles and pedestrians, landscaping, historic transportation preservation, etc. Actions in several strategies address this requirement. For example, "Maintain and improve sidewalk and bicycle routes," of Strategy B and "Implement bicycle and pedestrian trails on existing transportation rights-of-way where safety and design considerations allow," of Strategy D. The Statewide Bicycle and Pedestrian Master Plan and the Scenic Byways Program, summarized in the Appendix lay out processes for identifying and implementing many of the eligible enhancements.

16. *The use of innovative mechanisms for financing, including value capture pricing, tolls, and congestion pricing;*

Congestion pricing and market-based strategies are recommended in Strategy D. Financing recommendations are made regarding renewal of the Transportation Trust Fund. NJDOT will be studying the results of innovative financing mechanisms in other states, and considering their potential in New Jersey in later statewide planning studies.

17. *Preservation of ROW for construction of future transportation projects, including identification of unused ROW which may be needed . . . identification of those corridors for which action is most needed to prevent destruction or loss.*

New Jersey, the most densely developed state in the nation, has had a policy of preserving rights-of-way for transportation use, to the extent possible, for a number of years. This has been a sound policy that is continued in this plan: "Preserve strategic transportation rights-of-way" of Strategy D.

18. *Long-range needs of the state transportation system for movement of people and goods;*

The entire statewide transportation planning process and the resulting strategies and actions can be said to address this requirement. In particular, long-range needs for the movement of goods, a subject which is frequently neglected in transportation plans, received considerable attention. This is evidenced in the goals and objectives, and in every one of the strategies.

19. *Methods to enhance the efficient movement of commercial motor vehicles;*

See the discussion in 18, above. The plan has a number of actions designed to improve truck movement. These include: "Give priority to the elimination of bottlenecks on key freight and intermodal access routes," of Strategy C; "Implement CVO technologies to improve highway service to commercial vehicles" of Strategy D; "Construct AVLs serving . . . trucks . . . paying a market-based fee" of Strategy E; and "Conduct an industry-government campaign to acquaint the public with the way goods move in New Jersey and the importance of freight transportation to its economy" of Strategy H.

20. *The use of life-cycle costs in the design and engineering of bridges, tunnels or pavements;*

This requirement has been addressed in the management system studies, summarized in the Appendix.

21. *The coordination of plans and programs developed for MPOs with the statewide transportation plans and programs, and the reconciliation of such plans and programs, as necessary to ensure connectivity within transportation systems;*

This is discussed in 6 and 7, above.

22. *Investment strategies to improve adjoining state and local roads that support rural economic growth and tourism development, federal agency renewable resources management, and multipurpose land management practices, including recreation development;*

Economic growth and tourism are Goal 1 and Objective 1e of the plan, respectively. By using transportation to support the SDRP, NJDOT will be addressing this concern. New Jersey contains no federal agency lands.

23. *The concerns of Indian tribal governments having jurisdiction over lands within the boundaries of the state.*

There are no Indian tribal governments having jurisdiction over lands in New Jersey.

APPENDIX D

GLOSSARY

Access Management: Provide highway access management codes that require the interconnection of on-site circulation systems for adjacent developments along highways. This strategy is further implemented by requiring access to be gained through combined, grade separated, or signalized access drives serving a number of adjacent properties.

Access Management Plan: A plan showing the design of access for every lot on a state highway segment developed jointly by the Department, the municipality in which the highway is located, and the county, if a county road intersects the segment.

Advanced Traveler Information Systems (ATIS): Provides travelers, and soon-to-be-travelers, with real-time information on roadway, transit, route navigation and traffic flow conditions, including areas of congestion or delays, roadway and weather conditions, construction activities and resultant delays and travel times by route and mode.

American with Disabilities Act of 1990 (ADA): Mandates sweeping changes in building codes, transportation and hiring practices to prevent discrimination against persons with disabilities in all new public places, conveyances and employers. The significance of ADA in transportation is mainly felt in terms of transit operations, capital improvements and hiring.

Authorized Vehicle Lanes (AVL): Lanes restricted to certain vehicles, such as HOVs, commercial vehicles, SOVs paying a toll, or combinations of the above.

Carpool: Two or more people commuting on a regular basis to and from work by means of a vehicle with a seating capacity of nine passengers or fewer, either using one car and sharing expenses, or alternating vehicles used so that no money changes hands.

"Cashing Out" of Free Parking: Parking fees paid by drivers are equally distributed to all users of a facility (e.g., workplace). This simultaneously rewards individuals that do not travel alone to a facility by private auto, while providing economic disincentives to those who do.

Clean Air Act Amendments of 1990 (CAAA): Legislation that identifies "mobile source" (vehicles) as primary sources of pollution and calls for stringent new requirements in metropolitan areas and states where attainment of National Ambient Air Quality Standards (NAAQS) is or could be a problem.

Commercial Vehicle Operations (CVO): The use of electronic information transfers to and from trucks to facilitate operations, for example, to identify and track shipments, to achieve real-time routing.

Community of the Year Program: NJDOT and NJ TRANSIT designate a transportation community of the year, rewarding the community that has done the most to direct land use development and redevelopment in ways that will facilitate the efficient delivery of transportation services to that community.

Compressed Natural Gas (CNG): A type of motor vehicle fuel.

Compressed Work Week Program: A program which allocates the working hours into fewer than five days per week or fewer than 10 days per two-week period, such as a four-day work week or nine-day eighty-hour schedule.

Congestion Management Systems (CMS): Management plans, required by ISTEA for large metropolitan areas (200,000 population or more) and for states, that make new and existing transportation facilities more

effective through the use of travel demand management and operational management strategies. The CMS requirement strengthens the link between the CAAA and ISTEA.

Corridor Management Plan: A concept to control and manage regional through traffic into the freeway corridors within the city.

Delaware Valley Regional Planning Commission (DVRPC): One of New Jersey's three Metropolitan Planning Organizations.

Density Bonus: The allowance of additional building density (square footage or number of residential units) in exchange for the provision of specific amenities such as affordable housing or child care services. Density bonus is used as an incentive to project developers for the provision of needed services or amenities.

Department of Environmental Protection (DEP): A state agency.

Department of Motor Vehicles (DMV): A state agency.

Double Stack: Containers stacked two high on rail cars.

Electronic Toll and Traffic Management (ETTM): Electronic transmission and scan technology is used to rapidly identify vehicles moving through toll plazas, eliminating the need for stopping. Tolls are deducted from a pre-paid account, or are billed on a regular basis to major users. This technology can also be used to vary tolls by time of day or by vehicle occupancy to reduce peak period SOV travel.

Employee Transportation Coordinator (ETC) or **Ridesharing Coordinator**: A person selected to develop, implement, and administer an employee transportation program. These duties may include registering employees for a ride-match program, coordinating the formation of car/van/buspools, promoting the use of public transit, and monitoring employee participation in the program.

Employer Trip Reduction Program (ETRP): Programs for reducing employee vehicle trips, required under the CAAA of employers with more than 100 employees at a site.

Federal Highway Administration (FHWA): The agency of U.S. DOT with jurisdiction over highways.

Guaranteed Ride Home: A service provided to people who carpool/vanpool to provide rides home due to changes in schedule.

Integrated Bicycle Network: This action addresses the need for bicycles to be considered as users of all roadway systems, with accommodations for bicycles being an integral part of roadway system design and funding.

Intelligent Transportation Systems (ITS): A generic term for the advanced technology applications that provide real monitoring and information on automated highway and vehicle systems to enable the more efficient and safer use of existing highways.

Intermodal Access Routes: Transportation corridors are designed for use by a variety of transportation alternatives geared to expediting access to intermodal terminals for goods movement.

Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA): A major piece of federal transportation legislation that implements broad changes in the way transportation decisions are made. ISTEA emphasizes a diversity and balance of modes and the preservation of existing systems over the construction of new facilities, especially for roads.

League of Joint Underwriters Association (JUA): An association of auto insurers.

League of Municipalities (LOM): The association of New Jersey municipalities.

Level of Service: A measure of the quality of operation of a transportation facility, with Level of Service "A" being very good operation with little traffic delays, and Level of Service "F" being severely congested operation with large traffic delays.

Light Rail: Medium-capacity rail transit that provides passenger capacities ranging from 2,000 to 20,000 passengers an hour. Light rail can operate on grade separated, reserved right-of-way or in mixed traffic on city streets.

Liquid Natural Gas (LNG): A type of motor vehicle fuel.

Long-Range Plan (LRP): A 20-year forecast plan, now required at both the metropolitan and state levels, that must consider a wide range of social, environmental, energy, and economic factors in determining overall regional goals and how transportation can best meet these goals.

Maintenance: The continuous work or in kind replacement required to hold a driveway, road or structure against deterioration due to wear and tear, and to preserve the general character of the original improvement without alteration in any of its component factors.

Metropolitan Planning Organization (MPO): The agency designated by the governor (or governors in multi-state areas) to administer the federally required transportation planning process in a metropolitan area. An MPO must be in place in every urbanized area with a population of over 50,000. The MPO is responsible for the 20-year long-range plan and the Transportation Improvement Program. The official name for an MPO may also be Council of Governments, Planning Association, Planning Authority, Regional or Area Planning Commission. ISTEA provides procedures under which local governments and governor(s) may designate or redesignate an MPO.

Metropolitan Transportation Authority (MTA): A New York State agency; operates bus, subway, commuter rail and toll bridges and tunnels.

Mode: In transportation, refers to the type of transportation used, such as auto, bus, bike, walking, etc.

Multi-Modal: Utilizing different types of transportation like auto, bus, bicycle, walking, etc., to move from one place to another.

New Jersey County Planners Association (NJCPA): A professional association for County Planners.

New Jersey Department of Transportation (NJDOT): The State agency responsible for transportation in New Jersey.

New Jersey Office of State Planning (OSP): The State agency responsible for overseeing the State Development and Redevelopment Plan.

North Jersey Transportation Planning Authority (NJTPA): One of the three Metropolitan Planning Organizations in New Jersey.

Paratransit: Encompasses a variety of transportation services that are not rail/fixed guideway or fixed route bus service. These services could include carpooling, vanpooling, shared-ride taxi, or subscription bus service.

Park-and-Ride Facilities: Parking spaces are provided at transit stops and stations for commuters who need to access transit via the automobile; also refers to parking spaces where carpoolers or vanpoolers meet.

Parking Ratios: Municipal land development/zoning ordinances that require a ratio for the minimum number of parking spaces per 1,000 SF of floor area in a development.

Port Authority of New York and New Jersey (PANYNJ): The regional agency responsible for specific transportation facilities between New York and New Jersey.

Port Authority Trans Hudson (PATH): A rapid transit line connecting New Jersey with New York City.

Port Authority Transit Corporation (PATCO): A rapid transit line connecting New Jersey with Philadelphia.

Proof-of-Payment Fare Collection: A method of transit fare payment; payment is not required at entry to stations or busses, but fines are levied if riders cannot show evidence of fare payment -- prepurchased single or multiple ride tickets or passes -- to roving enforcement staff when spot checks are made.

Public-Private Partnerships: Cooperation between the public and private sectors is established to delegate certain operations or construction activities to either side depending on effectiveness and cost efficiency in undertaking the tasks.

Repair: Minor repairs or minor replacements in one or more of the elements to restore the facility to a condition requiring only maintenance.

Rideshare (carpool/vanpool): Auto trips that carry more than two people from home to work.

Shuttle Service: Employers with a concentration of employees within a certain geographic area, or in close proximity to a work location, provide shuttle bus service to the work site, either door to door, or from certain pick-up points.

Single-Occupancy Vehicle (SOV): A car containing only its driver.

South Jersey Transportation Planning Organization (SJTPO): One of the three Metropolitan Planning Organizations in New Jersey.

Southeastern Pennsylvania Transportation Authority (SEPTA): A major provider of transit services between the Philadelphia area, New Jersey and Delaware.

Special Improvement Districts for the Improvement/Management of Transit Station Area: Statutes permit the levy and collection of special property taxes within delineated districts for special purposes. Use of such a levy to fund capital improvements, operating and maintenance expenses in station areas.

State Development and Redevelopment Plan (SDRP): A statewide plan prepared by the OSP and adopted by the State Planning Commission to encourage growth and investment in areas where infrastructure has the capacity to support development.

Strip Development Regulations: Land use regulations that discourage strip commercial development such as a limitation on curb cuts, maximum front yard setbacks, limitation on the size and height of signage, the prohibition of front yard parking, a prohibition on drive thru restaurants and banking facilities, requirements for mixed use developments and multi-story buildings, and similar measures.

Structured Parking: Multi-level parking used in station areas to minimize the use of development parcels as surface parking lots, increasing development potential, local tax revenues and transit ridership.

Telecommuting: Working at home, through the use of a computer or other means, to avoid traveling to work during peak congestion periods.

Total Quality Management: A systematic analysis of the process for completing work in an effort to create a more efficient and higher-quality system. Transportation managers can utilize TQM for improving the coordination linkages between various levels of DOT.

Traffic Calming: A variety of traffic engineering measures to reduce the amount and speed of traffic on local streets and improve the safety and environment of a community.

Traffic Signal Synchronization: Traffic signals along critical stretches of roadway are linked electronically to a central monitoring and control station. The phasing of each successive signal is coordinated to facilitate traffic flow and provide the shortest possible trip time for through traffic.

Transfer of Development Rights/Districts: Transfer of development rights programs provide for the development of a community in a manner that utilizes infrastructure resources more efficiently than a sprawl development pattern. Areas are designated for conservation, and land owners in those areas are permitted to sell or "transfer" the amount of development they would be accorded under an overall plan to a higher density receiving area. The technique conserves open space and farmland, while allowing property owners to receive a return on their investment in their land without needing to develop it. The receiving area is the place where capital infrastructure funding is utilized to encourage more compact development at higher densities. The higher population and employment densities found in the receiving areas encourage and support transit service to that area.

Transit Coordinator: A full- or part-time administrator is designated in a company who oversees transportation management programs. The transit coordinator manages car and vanpool matching data bases, arranges guaranteed rides home, and keeps employees informed regarding transportation options available to them.

Transit Information Via Computer Modems: Information on bus and train operations and schedules would be available via personal computer modem, eliminating the need to call information hotlines for individuals and companies with access to the electronic technology.

Transportation Demand Management (TDM): A method to reduce traffic congestion by means other than roadway improvements, such as transit, staggered work hours, telecommuting, etc.

Transportation Improvement Program (TIP): A three-year transportation investment strategy, required at the metropolitan level, and a two-year program at the state level, that addresses the goals of the long-range plans and lists priority projects and activities for the region. (At the state level, the TIP is also known as a STIP.)

Transportation Management Association (TMA): A voluntary group set up to manage and reduce the number of trips taken in an area. TMAs are often begun and managed by employers.

Travel Demand: The number of trips created by activities, i.e., people traveling from home to work, shopping, recreation, and other places.

Transportation System Management (TSM): A catch-all term for methods used to improve the operation of roadways and intersections by low-cost measures within in the existing right-of-way.

Transportation Vouchers: Employers give each employee a set amount for commute transportation. The employee may use this amount to cover transportation costs (i.e., transit fares, ridesharing costs, parking fees).

Urban to Suburban Bus Service: Additional routes scheduled opposite the peak travel flow, typically from the urban employment centers out toward the suburbs. This service provides urban residents with an opportunity to access suburban, as well as other urban, employment centers.

Vehicle Miles of Travel (VMT): A measure of highway travel equal to the total travel of all vehicles.

Vehicle Trip: A car moving from an origination point to a destination point.

APPENDIX E

LIST OF TECHNICAL MEMORANDA AND REPORTS

Technical Memorandum: Title: Prepared By: Date:	Task F-22 Summaries of Related Studies and Plans to the Plan The RBA Group March 1995
Draft Report: Title: Prepared By: Date:	Task C-9 Draft Financial Report KPMG Peat Marwick LLP & RBA February 1995
Draft Technical Memo: Title: Prepared By: Date:	Task D-14 Development of a Report Card for the LRP RBA & UTRC February 1995
Draft Report: Title: Prepared By: Date:	Task G-31 NJDOT/RBA Focus Groups: Strategies and Actions Eagleton Institute November 1994
Technical Memorandum: Title: Prepared By: Date:	Task C-6 Financial Needs and Capacity Report KPMG Peat Marwick LLP November 1994
Technical Memorandum: Title: Prepared By: Date:	Task C-7 Identifying Financial Alternatives KPMG Peat Marwick LLP October 1994
Technical Memorandum: Title: Prepared By: Date:	Task D-14 Performance Measures and Standards *Develop Performance Measures for Each Objective* RBA & UTRC August 1994
Interim Report: Title: Prepared By: Date:	Task B-3 Future Worlds Development Vol. I - Report on Four Scenarios Vol. II - Appendices IAF & CGPA July 1994
Technical Memorandum: Title: Prepared By: Date:	Task D-13 A Determination of Goals and Objectives of Other Transportation Agencies *Draft Goals and Objectives* RPA June 1994

Technical Memorandum: Title: Prepared By: Date:	Task A-2 Documentation of the Benchmarking Process Survey Results from States and Transit Agencies *Draft Goals and Objectives* RBA & RPA May 1994
Report: Title: Prepared By: Date:	Task G-31 NJDOT/RBA Focus Groups: Performance Standards and Measures Eagleton Institute May 1994
Technical Memorandum: Title: Prepared By: Date:	Task A-2 An Analysis of Key Dimensions and Performance Measures Based on Public Assessments & Perceptions RBA & UTRC April 1994
Technical Memorandum: Title: Prepared By: Date:	Task A-2 An Analysis of Public Assessments and Perceptions HSH & KFS April 1994
Draft Technical Memo: Title: Prepared By: Date:	Task D-13 A Review of Agencies' Goals and Objectives RPA April 1994
Draft Technical Memo: Title: Prepared By: Date:	Task C-6 A Review of Historical and Projected Financial Data for Independent Authorities KPMG April 1994
Report: Title: Prepared By: Date:	Task A-1 Vol.I - Baseline Conditions and Assessments Vol.II - Review and Synthesis of Current Studies and MPO Plans RBA April 1994
Report: Title: Prepared By: Date:	Task C-6 Financial Condition Resource Paper KPMG October 1993

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